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CONFERENCE OF THE PARTIES
Committee on Science and Technology
Fifth session
Geneva, 2-4 October 2001
Item 8 of the provisional agenda

ADOPTION OF THE AGENDA AND ORGANIZATION OF WORK

Provisional agenda and annotations

Note by the secretariat

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I. PROVISIONAL AGENDA

1. The provisional agenda presented for adoption is as follows:

1. Opening of the session.

2. Election of Vice-Chairs.

3. Adoption of the agenda and organization of work.

4. Review of the guide to assist Parties in preparing their national reports under the Convention.

5. Benchmarks and indicators.

6. Survey and evaluation of existing networks, institutions, agencies and bodies.

7. Traditional knowledge.

8. Early warning systems.

9. Work programme of the Committee on Science and Technology.

10. Enhancing the usefulness and effectiveness of the Committee on Science and Technology.

11. Roster of independent experts.

12. Future work programme of the Committee on Science and Technology.

13. Establishment, if necessary, of an ad hoc panel or panels.

14. Other matters.

15. Report on the session.

II. ANNOTATIONS TO THE PROVISIONAL AGENDA

Introduction

2. In accordance with paragraph 7 of the terms of reference of the Committee on Science and Technology, adopted by the Conference of the Parties at its first session (29 September-10 October 1997) in decision 15/COP.1, the Committee shall adopt a programme of work, which should include estimates regarding its financial implications. The programme of work shall be subject to approval by the Conference of the Parties.

Venue

3. Article 24, paragraph 1, of the Convention to Combat Desertification provides that the Committee on Science and Technology shall meet in conjunction with the ordinary sessions of the Conference of the Parties. The fifth session of the Committee will therefore meet at the Palais des Nations, Geneva, during the fifth session of the Conference of the Parties. Tentatively, the Committee has been scheduled to meet from 2 to 4 October 2001, with a possible extension to 5 October 2001.

Participants

4. Article 24, paragraph 1, of the Convention provides that the Committee shall be multidisciplinary and open to the participation of all Parties. Consistent with the provisions of article 22, paragraph 7, it is anticipated that sessions of the Committee will also be open to observers in accordance with the rules of procedure.

Documentation

5. Lists of the documents prepared for the Committee's fourth and fifth sessions are contained in annex I. In addition to normal distribution, documents will be made available on the secretariat's Web site: http://www.unccd.int.

1. Opening of the session

6. In accordance with rule 22 of the rules of procedure of the Conference of the Parties (decision 1/COP.1 of 10 October 1997, as amended by decision 20/COP.2 of 11 December 1998), the Chair of the Committee shall be elected by the Conference from among the representatives of the Parties present at the session, in such a manner that every geographical region is fairly represented. This will occur at the opening meeting of the Conference on 1 October 2001. The fifth session of the Committee will then be opened on 2 October 2001 by the Chair of the Committee.

2. Election of Vice-Chairs

7. In accordance with paragraph 6 of the terms of reference of the Committee, the Committee shall elect its own Vice-Chairs, one of whom shall act as Rapporteur. Paragraph 6 of the terms of reference provides that the Chair and the Vice-Chairs shall be elected with due regard to the need to ensure equitable geographical distribution and adequate representation of affected country Parties, particularly those in Africa, and shall not serve for more than two consecutive terms.

3. Adoption of the agenda and organization of work

8. The Committee will have before it for adoption the provisional agenda contained in paragraph 1 above, prepared by the secretariat on the basis of decision 16/COP.4 of 22 December 2000. A tentative schedule of work is to be found in annex II.

New recommendations

9. Provision has been made in the Committee's schedule of work for the drafting of a report on the work of the Committee during the morning of 4 October 2001, and for approving it in the afternoon of the same day. Any new recommendations could also be dealt with at the plenary meeting of the Conference on 5 October 2001.

4. Review of the guide to assist Parties in preparing their national reports under the Convention

10. By decision 10/COP.4 of 22 December 2000, the Conference recalled its decisions 11/COP.1 of 10 October 1997 and 6/COP.3 of 26 November 1999 to establish an ad hoc working group to review and analyse, at its fourth session, national reports submitted by Parties, in order to draw conclusions and propose specific recommendations on further steps in the implementation of the Convention. The Conference of the Parties took note of the synthesis of scientific and technical information, particularly with regard to benchmarks and indicators used to measure progress, contained in document ICCD/COP(4)/CST/5.

11. The Conference of the Parties also took note of the concern expressed by representatives of the Committee on Science and Technology at its fourth session regarding the lack of information on scientific and technological information, particularly benchmarks and indicators, contained in the national reports submitted by Parties.

12. The Conference invited Parties and other countries in a position to provide assistance, as well as international organizations, to mobilize technical, scientific and financial support for the affected country Parties, and to initiate the testing of impact indicators, particularly at the national level.

13. The Conference encouraged Parties to include information in the national report on the scientific and technical activities to combat desertification undertaken at all levels, and to ensure the better integration of the activities of the scientific and technical community into the implementation of the Convention, and invited them to include in their national reports the progress in the implementation of the recommendations of the Committee on Science and Technology.

14. The Conference requested the secretariat to revise the guide in question, based on the issues expressed in the above paragraph, with the aim of providing guidance to Parties in better reflecting the activities of the scientific and technical communities and institutions in their national reports. Document ICCD/COP(5)/CST/5 accordingly contains proposals on how to revise the national reports help guide.

5. Benchmarks and indicators

15. By its decision 11/COP.4 of 22 December 2000, the Conference of the Parties took note of the important progress achieved on benchmarks and indicators by the Permanent Inter-State

Committee on Drought Control in the Sahel (CILSS) and the Sahara and Sahel Observatory (OSS) in Africa and by Parties in the group of Latin American and Caribbean countries and in other regions.

16. Having also taken note of the proposal of CILSS and OSS on the development of benchmarks and indicators, the Conference requested CILSS and OSS to report on progress in this initiative to the Committee on Science and Technology at its fifth session.

6. Survey and evaluation of existing networks, institutions, agencies and bodies

17. In its decision 13/COP.4 of 22 December 2000, the Conference noted that it had reviewed the final report on phase one of the survey and evaluation submitted by the United Nations Environment Programme (UNEP) on behalf of the consortium of agencies undertaking that phase.

18. The Conference also noted that it had reviewed the relevant documents prepared for the Committee on Science and Technology at its fourth session, including the terms of reference for phase two of the survey and evaluation, to be carried out in the southern African subregion, and the proposal submitted by UNEP on behalf of its consortium members.

19. Bearing in mind the recommendations of the Bureau of the Committee on Science and Technology on this subject, the Conference accepted the proposal put forward by UNEP on behalf of its consortium members. The proposal may be found in document ICCD/COP(4)/CST/3/Add.1.

20. By the same decision, the Conference requested the secretariat to enter into the necessary contractual arrangements with UNEP for the implementation of phase two of the survey and evaluation of existing networks, institutions, agencies and bodies. The interim report by UNEP, issued under the symbol ICCD/COP(5)/CST/3, is submitted for consideration.

7. Traditional knowledge

21. By decision 12/COP.4, the Conference noted the report of the Ad Hoc Panel on Traditional Knowledge and the recommendations of the Bureau of the Committee on Science and Technology on the issue of traditional knowledge.

22. The Conference also noted that the Italian authorities were in the process of establishing an international research centre on traditional knowledge at Matera, Italy. It invited the Italian authorities to present a proposal for the realization of a pilot project of a network of institutions, bodies and experts on traditional knowledge, taking due account of the observations made by the

Committee on Science and Technology on the issue at its fourth session. The proposal by the Italian Government may be found in document ICCD/COP(5)/CST/2 and the observations by the Bureau of the Committee in document ICCD/COP(5)/CST/2/Add.1.

23. The Committee is invited to consider these two reports and to adopt any recommendation to the Conference of the Parties that it deem appropriate.

8. Early warning systems

24. By its decision 14/COP.4 of 22 December 2000, the Conference of the Parties reappointed the ad hoc panel of 10 experts with the terms of reference set forth in paragraph 1 of the decision.

25. The Conference also requested the secretariat to make the necessary arrangements for the functioning of the ad hoc panel, including the provision of additional expertise, particularly in the area of participatory planning and legal advice.

26. The ad hoc panel of 10 experts held a meeting with other experts in the area of participatory planning and legal advice at Fuji-Yoshida, Japan, from 4 to 8 June 2001.

27. The Committee will have before it the report of the ad hoc panel, contained in document ICCD/COP(5)/CST/4; it is invited to consider the report and to adopt any recommendation to the Conference of the Parties that it deem appropriate.

9. Work programme of the Committee on Science and Technology

28. In its decision 16/COP.4 of 22 December 2000, the Conference of the Parties decided that, at its fifth session, the Committee on Science and Technology would study the issue of strategies for the communication of information and its use to generate best practices for combating desertification and mitigating the effects of drought. The Conference invited Parties and observers to contribute, in writing, case studies illustrating the communication of best practices related to the above theme, which were not to exceed 10 pages in length and were to be transmitted to the secretariat no later than 30 June 2001.

29. A synthesis of these studies has been prepared by the secretariat and may be found in document ICCD/COP(5)/CST/6.

10. Enhancing the usefulness and effectiveness of the Committee on Science and Technology

30. In its decision 17/COP.4 of 22 December 2000, the Conference of the Parties took note of the observations and recommendations of the Committee on Science and Technology during its fourth session and encouraged the Parties to hold extensive consultations on ways of improving the efficiency and effectiveness of the Committee on Science and Technology and to transmit their recommendations, which were not to exceed five pages in length, to the secretariat by 1 May 2001.

31. Pursuant to that decision, the secretariat prepared a summary of the recommendations received from Parties and organized a consultation on this issue by the regional groups, on 16 and 17 August 2001 in Geneva. Document ICCD/COP(5)/3/Add.2, containing the outcome of that consultation, is submitted to the Conference of the Parties for its consideration at its fifth session.

11. Roster of independent experts

32. Under the provisions of article 24, paragraph 2 of the Convention, the Conference is to establish and maintain a roster of independent experts with expertise and experience in the relevant fields. In accordance with decision 15/COP.4 of 22 December 2000, the secretariat has kept the roster up to date and its latest version may be found in documents ICCD/COP(5)/5 and Add.1 (in English only). The Committee may wish to review the roster, and make recommendations to the Conference regarding its composition and any guidance the Conference may wish to give to the secretariat as to its appropriate format.

12. Future work programme of the Committee

33. The Committee may wish to consider what recommendation to give to the Conference with respect to the future work programme of the Committee, and may also wish to make recommendations to enhance the effectiveness of the Committee in carrying out its responsibilities outlined in its terms of reference during the inter-sessional period.

13. Establishment, if necessary, of an ad hoc panel or panels

34. Under the provisions of article 24, paragraph 3, of the Convention, the Conference may, as necessary, appoint ad hoc panels to provide it, through the Committee, with information and advice on specific issues regarding the state of the art in relevant fields of science and technology. The Committee may wish to consider recommending to the Conference the establishment of any ad hoc panels which may be required.

14. Other matters

35. The Committee may wish to consider recommending to the Conference whether and how any other inter-sessional work in the domain of science and technology should be undertaken.

15. Report on the session

36. A draft report on the session will be prepared for adoption at the final meeting on the understanding that it will be completed after the session, with the assistance of the secretariat and under the guidance of the Chair.

Annex I

LIST OF DOCUMENTS PREPARED FOR THE FOURTH AND FIFTH SESSIONS OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

Fifth session

ICCD/COP(5)/CST/1	Provisional agenda and annotations
ICCD/COP(5)/CST/2	Traditional knowledge - Proposal of the Government of Italy for the realization of a pilot project for a network of institutions, bodies and experts on traditional knowledge
ICCD/COP(5)/CST/2/Add.1	Traditional knowledge - Proposal of the Government of Italy for the realization of a pilot project for a network of institutions, bodies and experts on traditional knowledge - Addendum - Report of the Bureau of the Committee on Science and Technology
ICCD/COP(5)/CST/3	Survey and evaluation of existing networks, institutions, agencies and bodies - Interim report from UNEP on phase two
ICCD/COP(5)/CST/4	Early warning systems - Report by the ad hoc panel
ICCD/COP(5)/CST/5	Proposals on how to revise the UNCCD National Reports Help Guide, with the aim of providing guidance to Parties to better reflect the activities of the scientific communities and institutions in their national reports
ICCD/COP(5)/CST/6	Strategies for the communication of information and its use to generate best practices for combating desertification and mitigating the effects of drought
ICCD/COP(5)/CST/7	Benchmarks and indicators - Report of CILSS and OSS on their initiative on the development of benchmarks and indicators
ICCD/COP(5)/INF.6	Report of the Bureau of the Committee on Science and Technology
ICCD/COP(5)/INF.7	Assessment of the status of land degradation in arid, semi-arid and dry sub-humid areas (LADA and MEA)
ICCD/COP(5)/3/Add.2	Implementation of the Convention - Synthesis of the report on ways of improving the efficiency and the effectiveness of the Committee on Science and Technology
ICCD/COP(5)/5 and Add.1	Maintenance of the roster of experts

Fourth session

ICCD/COP(4)/CST/1	Provisional agenda and annotations
ICCD/COP(4)/CST/2	Traditional knowledge - Report of the ad hoc panel
ICCD/COP(4)/CST/3	Survey and evaluation of existing networks, institutions, agencies and bodies
ICCD/COP(4)/CST/3/Add.1	Survey and evaluation of existing networks, institutions, agencies and bodies (submission from UNEP)
ICCD/COP(4)/CST/4	Early warning systems - Report of the ad hoc panel
ICCD/COP(4)/CST/5 and Corr.1	Synthesis of scientific and technical information contained in the reports from country Parties, in particular on benchmarks and indicators, for review by the CST
ICCD/COP(4)/5 and Add.1	Maintenance of the roster of experts
ICCD/COP(4)/INF.6	Dryland degradation assessment and the millennium ecosystem assessment
ICCD/COP(4)/INF.7	Report of the Bureau of the Committee on Science and Technology

Annex II

TENTATIVE SCHEDULE OF WORK FOR THE FIFTH SESSION OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

Tuesday, 2 October 2001	
10 a.m.-1 p.m.	**3 p.m.-6 p.m.**
- Organization of work (ICCD/COP(5)/CST/1) - Establishment of a roster of experts (ICCD/COP(5)/5 and Add.1) - Survey and evaluation of networks (ICCD/COP(5)/CST/3) - Report of the Bureau of CST (ICCD/COP(5)/INF.6)	- Benchmarks and indicators - Report of CILSS and OSS (ICCD/COP(5)/CST/7) - Improving the efficiency and the effectiveness of CST (ICCD/COP(5)/3/Add.2)
Wednesday, 3 October 2001	
10 a.m.-1 p.m.	**3 p.m.-6 p.m.**
- Traditional knowledge (ICCD/COP(5)/CST/2) - Report of the Bureau of CST on traditional knowledge (ICCD/COP(5)/CST/2/Add.1) - Proposals on how to revise the national reports help guide (ICCD/COP(5)/CST/5)	- Early warning systems (ICCD/COP(5)/CST/4) - Dryland degradation assessment and the millennium ecosystem assessment (ICCD/COP(5)/INF.7) - Synthesis of strategies for the communication of information and its use to generate best practices for combating desertification (ICCD/COP(5)/CST/6)
Thursday, 4 October 2001	
10 a.m.-1 p.m.	**3 p.m.-6 p.m.**
- Establishment of ad hoc panel(s) - Drafting of the report to the Conference of the Parties	- Programme of work for the Committee - Adoption of recommendations to the Conference of the Parties
Friday, 5 October 2001	
10 a.m.-1 p.m.	**3 p.m.-6 p.m.**
To be determined	-

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ADOPTION OF THE AGENDA AND ORGANIZATION OF WORK

Provisional agenda and annotations

Note by the secretariat

Corrigendum

Paragraph 22

Delete the last clause:

and the observations by the Bureau of the Committee in document ICCD/COP(5)/CST/2/Add.1

Paragraph 23

For the existing text *substitute*:

23. The Committee is invited to consider this report and to adopt any recommendation to the Conference of the Parties that it deem appropriate.

Annex I, List of documents

Delete from the list

ICCD/COP(5)/CST/2/Add.1	Traditional knowledge - Proposal of the Government of Italy for the realization of a pilot project for a network of institutions, bodies and experts on traditional knowledge - Addendum - Report of the Bureau of the Committee on Science and Technology

The title of document ICCD/COP(5)/CST/3 *should read*: Survey and evaluation of existing networks, institutions, agencies and bodies

Annex II, Tentative schedule of work

In the entry for Wednesday, 3 October 2001, 10 a.m.-1 p.m., *delete*: Report of the Bureau of CST on traditional knowledge (ICCD/COP(5)/CST/2/Add.1)

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Item 7 of the provisional agenda

TRADITIONAL KNOWLEDGE

PROPOSAL OF THE GOVERNMENT OF ITALY FOR THE REALIZATION OF A PILOT PROJECT OF A NETWORK OF INSTITUTIONS, BODIES AND EXPERTS ON TRADITIONAL KNOWLEDGE

Note by the secretariat

1. In accordance with decision 12/COP.4, the Italian authorities were invited to continue the work undertaken on traditional knowledge in collaboration with other interested institutions, and to present a proposal for the realization of a pilot project to create a network of institutions, bodies and experts on traditional knowledge. Based on the above decision, the proposal should include scientific representatives of all interested Parties, a description of the role of interested members of the network, a detailed programme of work, and the expected cost for its implementation. The proposal[1] is contained in an annex to this document.

2. By this same decision, the Bureau of the Committee on Science and Technology was requested at its inter-sessional meeting to review the project, to forward it to the regional groups, and present it for consideration at the fifth session of the Conference of the Parties (COP) in order to share results and expand opportunities for partnerships.

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[1] Reproduced without formal editing by the UNCCD secretariat.

Annex

ITKnet- Innovative Traditional Knowledge Network

I. BACKGROUND

The present project proposal complies with the recommendations made by the Ad Hoc Panel on Traditional Knowledge held in Matera, Italy, in May 2000 as well as with decision 12/COP.4.

II. GENERAL GOAL

The project aims at setting up a network of institutions, bodies and experts on traditional knowledge (TK), hereinafter referred to as ITKnet (Innovative Traditional Knowledge Network). Such a global network will be implemented in successive steps.

The goal will be reached by accomplishing a pilot project addressed to Mediterranean countries and opened to the interested parties (Chile, China, India and Iran have already shown their interest).

III. THE PROJECT RELIES ON:

- cognitive purposes
- operative actions

The cognitive purposes are:

1. To draw up an inventory on TK of pilot countries and their innovative use
2. To study the possibilities to disseminate TK
3. To study the parameters and the indicators on the loss of TK as well as to analyse the possible ways to fight against such a loss
4. To select the successful practices and to evaluate a system of incentives to implement and disseminate the Traditional Knowledge and the Innovative Technology (hereinafter referred to as TKIT) within the framework of traditional know-how
5. To examine any methods for the protection of rights on TK that subjects, communities, disseminators and innovators of traditional techniques can implement
6. To evaluate the promotion of traditional technologies by the focal points of each country and give indications to adopt nation-wide safeguard and dissemination strategies

The operative actions include:

1. The setting up of a pilot network in order to encourage and actively support partnership building in addition to the documentation and dissemination of traditional and local knowledge, know-how and practices
2. The establishment of the conditions for the implementation of a network of experts and institutions between the Parties of the Convention that will draw up the inventory on TKIT, disseminate and adopt them; the Mediterranean area will be a model for other regions

3. The sharing of methods of research, study and classification of TKIT; the training of the personnel of different countries to make inventories, to disseminate the TKIT, and their innovative use to fight against desertification
4. The implementation of Internet stations wherever necessary in order to facilitate communications and to strengthen networking and exchanges among various organizations and regions
5. The creation of a public multilingual internet database and companion CD ROM entitled Traditional Knowledge & Its Innovative Use to distribute among experts from drought and/or desertification affected countries in the Mediterranean and encourage the transfer of appropriate and environmentally-sound technologies and know-how while promoting the exchange of experiences
6. The setting out of eligibility criteria for network members as well as their rights and duties. The setting out of criteria to establish any operative structure
7. The setting out of the implementation phases of the global network

IV. CHARACTERISTICS AND WORKING OF THE NETWORK

The network will be made up of institutions, research centres, bodies, focal points of Mediterranean countries. Consequently, all organizations, institutions and experts will be able to collaborate, to exchange information and interact in a synergetic way. A web multimedia database will enable the network to disseminate and share information, thus taking a bottom-up approach to the study of TK.

Several dedicated levels of access to institutions, research centres, experts, focal points and users will be available. Multilingual information will be completed with comprehensible graphs.

According to the different access levels new information and remarks could be entered and automatically forwarded to experts, discussion forums, bodies, focal points as well as to the interested countries.

Some research centres will focus on several topics by filtering, processing and validating the information. The number and the entity of these research centres could change according to the needs and proposals.

The database does not depend on a single centralized pole but on a series of nodes that will apply for each topic.

The research centres that have already been involved in the initiative in a preliminary phase are the following:

- IPOGEA - Traditional Knowledge Centre - Matera, Italy -
- Institute of Water Resources Management - Karlsruhe University, Germany
- Arid Regions Institute(Institut des Regions Arides) - Medenine, Tunisia,
- Minia University, Egypt
- Centro de Investigación , Formación y Esperimentación sobre Arquitectura de Tierra, Energía renovables, Desarrollo sostenibile y Tranferencia Tecnológica a Paises en via de desarrollo - Madrid, Spain
- The Bodies: UNESCO, FAO, UNEP

In the preliminary phase the focal points of the Parties will select other research centres.

The information technology system supporting ITKnet shall:

1) Be accessible on the Internet by means of common WWW browsers.
2) Deal with multilingual information. The documents will be translated outside the system but after choosing the language, the interface of the user and the documents will share the same language.
3) Be updated directly on-line by privileged accesses (editors) controlled by the username and the password. The user can choose not to make the changes immediately available since they could be subject to the check and validation by authorized users and nodes (gatekeepers) guaranteeing the quality of data in the relative specialization fields.
4) Provide community services such as conferences, mailing lists and subscriptions to specific areas of the system to foster the collaboration and the synergy between the users and the bodies involved.
5) Notify via email one or more users (supervisors) and the nodes monitoring the system evolution of the changes saved.
6) Handle multimedia information supporting and completing the main information on local and traditional knowledge such as glossaries, pictures, bibliographies etc. Editors and gatekeepers will be able to link such information in order to complete the main information forms using a simple grammar to be consulted upon request by means of hypertexts.
7) Manage the on-line drawing up of presentations (slide shows) by means of pictures and other resources of the system.
8) Enable the distribution of the documents extracted from the system on multi-platform CD-ROM (MacIntosh and Windows).
9) Handle the collection of profiles (curricula vitae and description of the specialization fields) regarding experts, research centres, bodies, institutions according to the topics dealt with by ITKnet so that the users interested can set up a collaboration relationship with them.
10) Keep the graphs (banners) and customized references of the information received by each individual or body.
11) Easily fit the needs of ITKnet that could change according to the evolution of the activity.

The system could be localized anywhere on the Internet in compliance with cost optimization and access speed.

Therefore, it shall be possible to remotely administrate the server from all the qualified nodes of the network. Therefore, such nodes will be equipped with a quick Internet access, at least with an ISDN line, preferably with an ADSL or higher, according to the availability of these lines within the area.

V. WORK PROGRAM

1st year

GOALS

Cognitive goal: to continue the drawing up of the inventory on TK and their innovative use.
Operative goal: to highlight the physical network of the centres involved.

Activities

1. Census-taking of the main bodies, research centres and institutions dealing with TK.

2. Collaboration with bodies, research centres and institutions dealing with TK.

3. Organization of a workshop on the pilot project involving the countries where the workshop is organized, the focal points, a representative of each regional group, the annexes, the bodies, the research centres and the institutions leading a key role in the initiative.

The workshop will focus on two topics of the project:

a) Analysis of the progress made on cognitive purposes
b) Operative actions to set up the organization structure

As for the former, the following issues will be dealt with:

- The drawing up of an inventory on TK of Pilot Countries and their innovative use;
- The study of the parameters and indicators on the loss of TK and the analysis of the possible ways to fight against such a loss.

Therefore, a form to draw up an inventory on TK will be approved.

As for the latter, the following issues will be dealt with:

- The evaluation of the eligibility criteria of the network members, of their rights and duties as well as the evaluation of the opportunity to set up a body that could take part in the network;
- The evaluation of the needs of each country (training, technical equipment etc.);
- The evaluation of the successive phases to implement the global network.

Therefore, the information on the needs of each country to implement the capabilities of participation in the network will be collected.

4. Organization of a stage, training courses and thematic workshops in the countries needing to implement their own capabilities.

5. Implementation of nodes of a dedicated network on TKIT at the institutions of Mediterranean countries

6. Creation of Internet stations wherever necessary and formulation of a first hypothesis of qualification of Database nodes

2nd Year

GOALS

Cognitive purpose: Database dissemination
Organization purpose: Network implementation

Activity

1. Questionnaire administration
2. Data collection and processing
3. Realization of graphs on TK and their innovative use
4. Organization of the information to create the database on the basis of the results of the inventory
5. Development of the database software and organization of the server
6. Organization of an e-mail conference to evaluate the working of the database
7. Organization of the same kind of workshop foreseen in the first year

The workshop will focus on:

Cognitive purpose: Work programme for the successive phases aiming:

- To study the parameters and the indicators on the loss of TK and to analyse the ways to fight against such a loss
- To choose the successful practices and to assess a system of incentives to adopt and disseminate the TKIT within the framework of traditional know-how
- To examine any methods for the protection of rights on TK that subjects, communities, disseminators and innovators of traditional techniques can implement.
- To evaluate the promotion of traditional technologies by the focal points of each country and give indications to carry out nation-wide safeguard and dissemination strategies

Operative actions:

- To assign competences and roles to the network
- To set out the successive phases concerning the widening of the process for the implementation of the global network.

VI. COSTS

Cross-reference to the work programme	Activities: Details of Eligible Costs	Unit	Number of Units	Unit Rates	TOTAL
1ST YEAR					
Involvement of the main bodies, research centres and institutions dealing with TV					
	Census-taking of the main bodies, research centres and institutions dealing with TV	1 person / 1 month	1	3000	3000
	Collaboration with bodies, research centres and institutions dealing with TV	1 person / 2 months	2	3000	12000
Organization of a WORKSHOP					
	Administrative Assistant	2 persons / 1 month	2	1500	3000
	Running costs of office and direct mailings	Provision	1	1000	1000
	Research of background material for Workshop - Senior Expert	2 persons / 1 month	2	3000	6000
	Participants travel	25 persons	25	1000	25000
	Editing and dissemination	Lump sum	1	2000	2000
	Per diem - participants (5 day Workshop)	25 persons, 5 Days	125	181	22625
	Staff Costs Field Researchers - Senior Experts	1 person / 7 days	7	1200	8400
	Consultant on topics Workshop	2 persons / 1 months	2	3000	6000
	Staff Travels	4 Persons	4	1000	4000
	English & French Interpreters	4 persons / 5 days	20	1000	40000
	Running costs - convention hall and equipment (5 days)	Lump sum	1	3000	3000
	Running costs interpreter cabins	Lump sum	1	1000	1000
	Travels Interpreters	4 persons	4	1000	4000
Organization of a stage					
	Organization of a stage - 5 days in 10 countries	2 persons / 2 month	4	3500	14000
	Staff Costs - Information Technology expert	1 person/	1	3500	3500
	Per diem (staff)	3 persons 5 days	15	181	2715
	Running costs of office and direct mailings	Provision	1	3000	3000
	Travel	3 persons/ 10 travel	30	1000	30000
	Per diem (stagers)	4 persons 5Days	20	181	3620
	Materials & Equipment - Hardware purchase	Provision	1	5000	5000

Creation of internet stations and formulation of a first hypothesis of qualification of Database nodes					
	Implementation of nodes of a dedicated network on TKIT at the institutions of Mediterranean countries	2 persons / 1 months	2	5000	10000
	Hardware Cost	Lump sum	1	5000	5000
	Creation of Internet station	Internet station	10	5000	50000
Coordination and organization					
	Projet coordinator - senior	1 person / 12 months	12	5000	60000
	projet personnel - junior	2 persons / 12 months	24	3500	84000
2ème YEAR					
Preparation and distribution of model questionnaire					
	Questionnaire administration	1 person / 1 months	1	3500	3500
	Data collection and processing Senior Expert	1 person / 1 months	1	5000	5000
	Realisation of graphs on TK and their innovative use	1 person / 1 months	1	3500	3500
	Organization of the information to create the database on the basis of the results of the inventory	1 person / 1 months	1	3500	3500
Creation of the database software and organization of the server					
	Staff Costs - Senior Experts	2 persons / 2 months	4	5000	20000
	Staff Costs - Junior Experts	2 persons / 2 months	4	3500	14000
	Staff Costs - Administrative Assistant	1 person / 2 months	2	3500	7000
	Staff Costs - Information Technology Experts	2 persons / 2 months	4	3500	14000
	Staff Costs - Translation of wed site database in French & English	1 person / 1 months	1	3500	3500
	Materials & Equipment - Software	Lump sum	1	15000	15000
	Materials & Equipment - Hardware	Lump sum	1	5000	5000
Creation of CD Rom					
	Staff Costs - Final translation of web site database in French & English	1 person / 2 months	2	5000	10000
	Software and rights	Lump sum	1	5000	5000
	Structure and compilation	1 persons / 1 months	1	5000	5000
	CD Rom	CD Rom	1000	15	15000

E-mail Conference					
	Staff- E-mail Conference preliminary information junior	1 person / 1 months	1	3500	3500
	Staff Costs -E-mail Conference Senior Expert -	1 person / 1 months	1	5000	5000
	Staff -E-mail Conference Senior Information Expert	1 person / 1 months	1	5000	5000
	Staff -E-mail Conference secretary junior	1 person / 1 months	1	3500	3500
Organization of a WORKSHOP -					
	Administrative Assistant	2 persons / 1 month	2	3500	7000
	Running costs of office and direct mailings	Provision	1	3000	3000
	Research of background material for Workshop Senior Expert	2 persons / 1 month	2	5000	10000
	Participants Travels	20 persons	20	1000	20000
	Per diem - participants (5 day Workshop)	20 persons/ 5 days	100	183	18300
	Staff Costs Field Researchers - Senior Experts	1 person / 7 days	7	1250	8750
	Consultant on topics Workshop	6 persons / 1 months	6	5000	30000
	Staff travel	6 persons	6	1000	6000
	English & French Interpreters	4 persons / 5 days	20	2000	40000
	Running costs - convention hall and equipment (5 days)	Lump sum	1	1000	1000
	Running costs interpreter cabins	Lump sum	1	5000	5000
	Travels Interpreters	4 persons	4	1000	4000
	Editing and dissemination	Lump sum	1	2500	2500
Coordination and organization					
	Projet coordinator - senior	1 person / 12 months	12	5000	60000
	Projet personnel - junior	2 persons / 12 months	24	3500	84000
SUBTOTAL					88300
	General costs (10%)				88300
	Administrative cost (13%)				114790
TOTAL					1086090

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UNITED NATIONS

Convention to Combat Desertification

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5 September 2001

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Item 5 of the provisional agenda

SURVEY AND EVALUATION OF EXISTING NETWORKS, INSTITUTIONS, AGENCIES AND BODIES

Note by the secretariat

1. In accordance with the provisions of paragraph 1 of article 25 of the United Nations Convention to Combat Desertification (UNCCD), the Committee on Science and Technology (CST) is to make provision for undertaking a survey and evaluation of relevant existing networks, institutions, agencies and bodies willing to become units of a network to support implementation of the Convention.

2. Pursuant to paragraph 3 of decision 13/COP.4, the Bureau of the Committee on Science and Technology at its inter-sessional meeting of 14-15 August 2001 invited the United Nations Environment Programme (UNEP) to submit a revised proposal for undertaking phase 2 of the survey and evaluation of existing networks, institutions, agencies and bodies.

3. In consultation with its Consortium partners, UNEP has revisited the original offer contained in ICCD/COP(4)/CST/3/Add.1 and suggests limiting the pilot phase 2 of the survey and evaluation to the 10 anglophone countries of the Southern African Development Community (SADC).

4. The submission from UNEP is annexed hereto as requested by the CST Bureau.

Annex

REVISED PROJECT PROPOSAL

Title of project: ***Phase 2 of the survey and evaluation of networks, agencies and bodies relevant to the implementation of the Convention: Pilot in-depth survey in the southern African subregion and maintenance and development of the database developed during phase 1***

With reference to the request by the Bureau of the Committee on Science and Technology at its meeting on 14-15 August 2001 (ref. ICCD/COP(5)/INF.6 of 21 August 2001), the UNEP-led Consortium of agencies submits herewith its revised proposal for undertaking phase 2 of the Survey and evaluation of networks, agencies and bodies relevant to the implementation of the Convention (ref. the original offer ICCD/COP(4)/CST/3/Add.1 of 29 November 2000).

By concentrating exclusively on anglophone countries during the phase 2 pilot project, Consortium members will be able to work with a broad range of southern African countries in the most cost-effective way possible.

Developing, testing and refining the in-depth survey instruments in one language alone will enable the Consortium to cut down as much as possible on potential problems of misunderstanding or mistranslation during phase 2, and to concentrate entirely on developing the best possible survey instruments for wide-scale use during phase 3. Once the in-depth survey instruments are fully developed and tested in one language, it will be a much quicker and more cost-effective task to translate these instruments into other languages for use during phase 3.

However, further development of the web site/database language capabilities will continue as per the original plan for phase 2.

Since its inception during phase 1, the web site database has allowed data entry in European languages based on Roman script (such as English, French, German, Spanish and Portuguese); this will continue to be true during phase 2. In addition, during phase 2 the database development team will work to ensure better search capabilities across all these European languages, so that, for example, a search by country name or key word in Spanish will not only retrieve all relevant entries for that term in Spanish-language entries, but will also retrieve relevant entries for that term in other European languages.

By limiting the pilot survey to the 10 anglophone countries of SADC (ref. figure 1 below), instead of the original 18 anglophone, francophone and Portuguese-speaking countries of the southern African subregion, the Consortium would also be able to bring the cost of the project down to US$ 440,000 from the original US$ 655,000. This is due mainly to less costly workshops with fewer participants and no translation and interpretation requirements, fewer country visits and fewer country Parties to be supported. The attached revised budget sheet gives the new breakdown of costs by activity clusters and by members of the Consortium.

The proposed concentration of the phase 2 project would not otherwise affect the level of planned activities and outputs or the envisaged support to Parties.

The other terms and conditions of the original offer (ICCD/COP(4)/CST/3/Add.1 of 29 November 2000) remain valid.

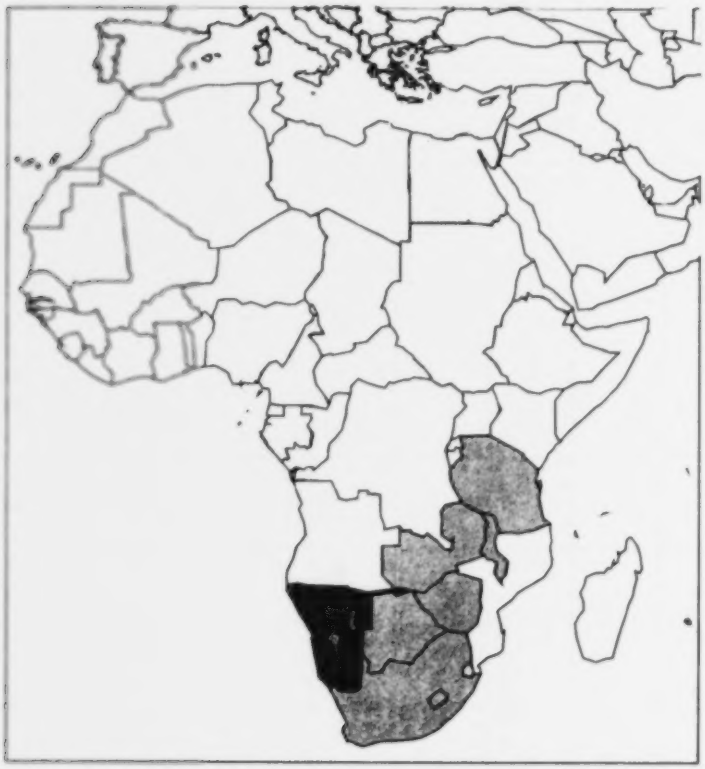

Figure 1: The 10 anglophone member states of the Southern African Development Community (SADC): Botswana, Lesotho, Malawi, Mauritius, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

Annex 4 rev: Revised estimated costs (US$) of phase 2

This estimated costing includes: (i) the costs which will be incurred by each of the seven Consortium members as indicated below, including costs of subcontracts with the collaborating organizations to provide thematic, subregional, national, sub-national, NGO/CBO and other inputs, and (ii) costs to cover project coordination and implementation, and the organization by UNEP of planning and synthesis workshops.

Budget items	UNEP	ALIC / UofA	ISRIC	UNSO/ UNDP	DRFN / SADC	WMO	RIOD - NFP	[illegible]	Total
Preliminary action: contracting and development of survey instruments and evaluation criteria (ref. TOR 3 a,b,c,d,e)	2,000	2,000	2,000	2,000	2,000	2,000	2,000		14,000
Planning workshop for development of survey instruments and evaluation criteria as above (ref. TOR 3 a,b,c,d,e), translations, reports	40,000								40,000
In depth evaluation of networks / units in southern Africa (ref. TOR 3 f,j,k)					25,000	4,000	10,000		39,000
Maintenance and development of the website database including its global operationalization (ref. TOR 3 g,k and 2 c)		54,000	16,000	4,000	20,000 (regi-onal)		10,000		104,000
Phase 2 synthesis and phase 3 strategy workshop (ref. TOR 3 c,h,i,k)	40,000				20,000				60,000
Coordination and reporting	65,000								65,000
Allowance for hardware and software for operationalizing the subregional network and decentralized database (ref. TOR 3 k)					8,000 + 20,000			40,000	68,000
Total	147,000	56,000	18,000	6,000	95,000	6,000	22,000	40,000	390,000
Contingency fund 13% (UNON service costs!)									50,000
Grand total									**440,000**

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UNITED NATIONS

Convention to Combat Desertification

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EARLY WARNING SYSTEMS

Report of the ad hoc panel

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I. INTRODUCTION

1. By decision 14/COP.4, the UNCCD Conference of the Parties reappointed an ad hoc panel of 10 experts "to examine further the following:

(a) Critical analysis of the performance of early warning and monitoring and assessment systems, linking traditional knowledge and early warning systems, especially in the areas of the collection of data, dissemination of information and measuring for drought preparedness;

(b) Methods for and approaches to the prediction of drought and monitoring of desertification, particularly the method of analyzing vulnerability to drought and desertification, especially at the local, subnational and national levels, with special regard to new technological developments;

(c) Mechanisms to facilitate an exchange of information between scientific and technological institutions, in particular focusing on national and subregional networks on the prediction of drought and monitoring of desertification;

(d) More detailed measures for drought and desertification preparedness, in cooperation with the approaches, from hazard protection to risk management, adopted by the International Strategy for Disaster Reduction."

2. By the same decision, the UNCCD secretariat was requested to make the necessary arrangements for the functioning of the ad hoc panel, including the provision of additional expertise, particularly in the area of participatory planning and legal advice.

3. The ad hoc panel was convened from 4 to 8 June 2001 at the Yamanashi Institute for Environmental Sciences in Fuji Yoshida City, Yamanashi Prefecture, Japan. The meeting was co-sponsored by the Government of Japan, in collaboration with the Yamanashi Prefecture. Annex I lists the ad hoc panel members who attended. The panel retained officers selected at the first panel meeting in Bonn, from 31 May to 3 June 2000:

Chair:	Dr. Kazuhiko Takeuchi (Japan)
Vice-Chair:	Mr. Abdellah Ghebalou (Algeria)
Vice-Chair and Secretary:	Dr. Anneke Trux (Germany)
Vice-Secretary:	Dr. Ali Umran Komuscu (Turkey)

4. In accordance with decision 14/COP.4, the secretariat invited additional experts, also listed in annex I, from relevant technical institutions with operational responsibilities in desertification and drought information systems. At the request of the Chair of the panel, additional experts were also invited.

5. The participants reviewed the background documents, including reports provided by Panel members and experts (annex II). Based on these documents, the participants engaged in a substantive discussion. The agenda for the meeting can be found in annex III.

6. The discussions responded to UNCCD Article 16, which states, "The Parties agree, according to their respective capabilities, to integrate and coordinate the collection, analysis and exchange of relevant short-term and long-term data and information to ensure systematic observation of land degradation in affected areas and to understand better and assess the processes and effects of drought and desertification. This would help to accomplish, *inter alia*, early warning and advance planning for periods of adverse climatic variations in a form suited for practical applications by users at all levels, including local populations."

7. Recognizing the importance of building on existing operational early warning systems within the framework of national action programmes (NAPs) to combat desertification and drought, the participants reviewed and elaborated the four technical topics defined in decision 14/COP.4 and agreed to the conclusions covered in the following sections.

II. CRITICAL ANALYSIS OF THE PERFORMANCE OF EARLY WARNING AND MONITORING AND ASSESSMENT SYSTEMS, LINKING TRADITIONAL KNOWLEDGE AND EARLY WARNING SYSTEMS, ESPECIALLY IN THE AREAS OF THE COLLECTION OF DATA, DISSEMINATION OF INFORMATION AND MEASURING FOR DROUGHT PREPAREDNESS

Early warning systems (EWSs) for drought and food security have been operational for over 20 years; yet in some instances, famine still occurs and food security is not increasing. This is in spite of the fact that some systems have been improved so that they address not only famine but also food security. This may be an indication of some weaknesses in the current EWS information or institutional arrangements.

The panel noted several positive developments, including:

- Conceptual frameworks of EWSs;
- Improvements in data collection and analysis using remote sensing and Geographical Information System (GIS), in addition to conventional methods;
- Trained personnel.

However, major problems continue to retard the effectiveness of some of these systems, including:

- Weak institutional arrangements;
- Lack of trust/credibility among stakeholders;
- Poor communication networks;
- Lack of coordination among stakeholders;
- Untimely release of EW results;
- Use of information for political and economical reasons, or selfish ends;
- An unsupportive political environment.

Notwithstanding these problems, some successful systems exist. Even if successful, most EWSs stop at famine and do not provide protection from future famine incidents.

The participants saw the existing early warning and monitoring and assessment systems converging into a complementary framework in the future, thereby using the same institutional arrangements, similar datasets and indicators. This will improve their performance and cost-effectiveness. Thus, the conceptual and operational issues differentiating drought EWSs and desertification monitoring and assessments were revisited by the panel. The participants agreed that future effective performance and possibly combined operational frameworks may depend on the following:

1. Conceptually disentangling the complex relations between EWSs for drought and food security and monitoring and assessment of desertification

Early warning for drought prediction and assessment, and monitoring and assessment for desertification, are fundamentally interrelated yet operationally different activities. Parameters and methodologies applied for early warning of drought fall short of what would be required to realize a system for monitoring and assessment of desertification. Desertification is a phenomenon which is slow to develop. In this respect, the main areas requiring consideration, adjustment and inclusion are temporal scales and an enlargement of information on conditions.

There is a need to go beyond "state of the art" assessment and monitoring of desertification, to include vulnerability and risk assessment, using current and past data and information on the status of desertification. Such data would be derived from monitoring programmes for drought and desertification. Such a series of measurements are conducted with a view to providing a warning, should the trend become dramatic.

2. Vulnerability mapping and assessment

It was further agreed that the concept of vulnerability assessment should integrate biological, physical and socio-economic aspects, and management practices. A "system" for vulnerability assessment should not be reduced to a set of materials and data, but should be seen as an assemblage of:

- Methods (for obtaining data, analysing it, formatting, etc…);
- Practices (how things function in practice);
- Institutions and arrangements (rules and regulations for data collection, organizations undertaking data collection, analysis);
- Linkages between scientific institutions (data collection and analysis), decision-makers (action) and services (implementation),

combined in order to achieve an objective. Therefore, it was felt that vulnerability/risk mapping and assessments may be possible in the future. Comparison of the two systems is shown in table 1.

Table 1. Characteristics of early warning/monitoring systems for drought and famine and desertification

	Drought	Desertification monitoring and assessment
Objective	Operational warning of impending crises of drought and food security in order to propose immediate response	Forewarning of land degradation in order to have proof of land degradation process and to provide decision-making support for policy making
Time scale	Short term: seasonal	Long term: several years
Response	Immediate action	In practice: project/programme approach
Level	Small scale	Large scale
Information needed on	- Rainfall, aridity - Normalized Difference Vegetation Index (NDVI), vegetation cover - Population pressure	
	- Crops and livestock - Food supply and consumption - Marketing and prices	- Land information - Socio-economic issues - Human activities
Harmonization of indicators	More or less common understanding of indicators to be used among major systems	At present no agreeable set of common benchmarks and indicators

In light of the above comparison, participants agreed that both types of systems share similar databases and indicators. As previously recommended and adopted by COP 4, monitoring and assessment of desertification should build on existing EWSs. However, whether the difference between drought and desertification EW/monitoring in terms of time scale and land-related indicators would need technically and institutionally separate facilities will depend on specific national, subregional and regional situations.

3. Clearly defining the elements of a system for desertification monitoring and assessment

Desertification monitoring and assessment in its widest sense would include a framework encompassing an array of activities over a number of parameters; table 2 includes some important elements.

The concept implies fundamental research and data collection that can provide results only in the long term. The uniform collection of dataset parameters is not always possible because of differences in prevailing local or national situations. In order to meet countries' expectations of obtaining results within a short term, the following proposals were made:

- Separate scales and details of datasets for policy-making from those for validating results;
- With regard to the limited capacities in most countries, it was proposed that an up-scaling approach is mandatory and not optional; small-scale and large-scale assessment for representative vulnerable areas has to be combined. Details given at the local level are not always important at the international level. However, sufficient details are needed in order to identify vulnerable areas;
- The system must be flexible; some of the data might be dropped, in a case of lack of capacity;
- Use a framework for linkages and for identifying the reasons for collecting the minimum information required;

- Use national resources assessment databases available in most countries which will entail coping with the realities prevailing in those countries;
- "Quick and indicative" assessment methodologies should be considered as part of the system.

Table 2. Elements for implementing desertification EW/monitoring systems

Data analysis system	Understand historical, current and future responses to human and animal pressures, natural processes, landscape vulnerability
Data layers	Land resources Human resources Management practices
Analyse pressure	Decipher human and animal pressure Understand landscape response Understand degradation types
Indigenous knowledge and desertification assessment	Obtain feedback from local people on scientific results
Operation of the EWS	**Area approach** - A basin or watershed approach for biophysical resources in stream-dominated areas - An administrative area approach for socio-economic variables - An administrative area approach for all variables in arid areas without surface drainage - Ensure vertical and horizontal integration of institutions engaged in EWSs - Ensure vertical and horizontal integration of institutions working in EWSs - Improve coordination with national development efforts - Desertification assessment should promote local anti-desertification actions

4. Closely linking the work of ad hoc panels on EWSs and on benchmarks and indicators

The UNCCD stresses the importance of monitoring and evaluation in order to provide better feedback and lessons learned, and to give scientific advice on the process of implementation of action programmes. In this regard, the OSS/CILSS/GRULAC/China Working Group on monitoring with regard to supporting decision making within UNCCD implementation has made several proposals:

- Inventory and follow-up of ongoing activities;
- Monitoring of implementation processes, using the criteria established by the UNCCD (participation, partnership, coordination etc.) and as adopted by the COP;
- Monitoring of policies adopted within the NAP;
- Monitoring and assessment of desertification;
- Monitoring of impact of NAP.

The last two are closely interlinked; indicators for impact monitoring of NAPs are being developed and tested.

5. Developing close links between activities on early warning and monitoring and assessment with traditional knowledge

Scientific data often requires calibration and validation; crosschecking and identifying collaborative evidence; and filling gaps and identifying explanations

of scientific research results. These often need contextual interpretation based on traditional and local knowledge in order to be relevant and sound. Nevertheless, it should not be a one-way flow of information; partnership and sustainability require mechanisms for feedback to local-level decision makers, including local government, communities, and resource users/owners.

6. Conclusions

- Reviewing lessons learned from drought early warning systems, the participants recognized that early warning is a concept which has developed mainly in the context of natural hazards, especially drought, with a view to improving food security. However, significant conceptual and scientific advancements could be made in existing systems which might apply to desertification as well.

- Recognizing linkages between drought EWSs and desertification, information on land degradation is also valuable for poverty reduction strategies and food security analyses. The accumulation of information on drought is important for desertification monitoring.

- Recognizing the links between benchmarks and indicators and drought EWSs, ongoing discussions and the testing of a common list of indicators for impact monitoring in several regions begin with definition and testing of general desertification monitoring indicators.

- In order to develop realistic assessments of local situations and to ensure local ownership, early warning systems should connect local communities at risk with the technical structures of EWSs.

7. Recommendations

The panel made the following recommendations:

(a) Develop a common termino'ogy in order to facilitate interaction;

(b) Facilitate access to, and enhance the transparency of, databases;

(c) Ensure that the systems are more demand driven and develop adequate subnational nodes;

(d) Focus on developing decision-making rather than just keeping up with technological advances;

(e) Build up real partnership in order to establish an enabling institutional and political environment;

(f) Improve drought early warning systems by integrating land degradation information;

(g) Build up desertification monitoring systems on existing drought early warning systems as much as possible;

(h) Encourage joint efforts between operational EWSs and organizations working on impact indicators;

(i) Work with community groups responsible for data collection, with particular regard to women's participation;

(j) Collect and analyze a variety of socio-economic data, disaggregated by gender where possible, and conducted with participatory tools such as field observations and individual interviews, among other participatory tools;

(k) Discuss and validate results and develop strategies with local communities, taking account of local cultural practices.

III. METHODS FOR AN APPROACHES TO THE PREDICTION OF DROUGHT AND MONITORING OF DESERTIFICATION, PARTICULARLY THE METHOD OF ANALYZING VULNERABILITY TO DROUGHT AND DESERTIFICATION, ESPECIALLY AT THE LOCAL, SUBNATIONAL AND NATIONAL LEVELS WITH SPECIAL REGARD TO NEW TECHNOLOGICAL DEVELOPMENTS

Discussions by the panel on this topic demonstrated that there are several methods being used for the prediction of drought which do not predict desertification. Clearly, there are also a number of approaches, influenced by various factors, and depending upon different situations, especially in the sourcing of data and analytical facilities available.

1. Data

To a large extent, both desertification monitoring and drought early warning require data from remote sensing and from field surveys. Field survey data can be used independently in their original form, or used for the validation of remotely sensed information. In addition, operational drought EWSs acquire and analyse the same field and remote sensing data required to monitor the extent and impacts of desertification.

The primary data used for desertification monitoring and drought early warning on a small scale are rainfall measurements and the remote sensing-derived Normalized Difference Vegetation Index (NDVI). Other remote sensing data sources are currently available, including data from new satellite systems in orbit. Such data, as well as data obtained from the field, can be used to demonstrate changes in vegetation cover and species composition.

Further, it was recognized that desertification monitoring requires the systematic tracking of land conditions, work not undertaken by most drought EWSs and which the older generation of satellites do not sufficiently cover.

2. Methods and approaches

(a) Remote sensing data and field data are currently used to analyse and map vulnerability to food insecurity and to desertification in the GIS environment.

(b) Remote sensing data are mostly dimensionless indices, which require ground-truthing and calibration to transform them into real units. Specifically, effective desertification monitoring requires quantifying vegetative conditions in their current status, as well as verification of previous vegetative conditions covering a period of more than 20 years; this requires reliable and accurate

records, or the use of local knowledge which can only be obtained from the residents.

(c) New developments in data analysis and integration frameworks are being carried out for both desertification assessment and monitoring and drought EW by various national and international organizations in different regions. Of particular significance, it was noted, are the prospects of using new analytical procedures to derive indicators on land conditions, soil erosion models and vegetation structure and conditions, using digital information from a series of historical sets of high-resolution satellite images which cover several years. Results can be validated using local knowledge and interpretation of the effects of previous policy regimes on agriculture or natural resources management. This can influence the formulation of new policies.

(d) GIS technology can be utilized in handling several layers of huge data sets during such an analysis. Further, GIS is mandatory for upscaling approaches and the integration of socio-economic data. There are, for example, possibilities for integrating remote sensing data analysis results with grazing statistics at the community level. This approach is new and provides better information extraction and analysis capability. Unfortunately, the cost may be prohibitive for many developing nations. Therefore, in spite of the high scientific value of the technique, it may be difficult to apply in most affected nations.

(e) Monitoring of desertification at different scales requires images of different resolutions. At the local level, high resolution images are necessary, while at national and regional levels these can be tracked using low resolution satellite information. Furthermore, the cost of these low resolution products may not be a constraint; yet they can influence decision making at local to national levels, especially with respect to drought EW. New and alternative technologies may provide better information, so long as these are cost effective.

(f) Traditional knowledge must be incorporated into the data analysis system, and more emphasis should be given to such knowledge, especially where data generation through high technology may be difficult; this will help to validate the information and to obtain feedback.

(g) Another strategy to enable the technological and cost-effective utilization of all sources of information is first to identify areas vulnerable to degradation by means of reconnaissance level studies using low-resolution images. Then the area should be rapidly ground truthed, followed by the use of recent high-resolution remotely-sensed data to detail vulnerable areas. It is necessary to test and use this kind of technology and data by integrating it with socio-economic data through GIS, and to analyse the results in order to draw conclusions. Since cost is normally a factor, it should be broken down into hardware, software and data components. These may be partly one-time costs, but the collection of field information may be high for most of the developing affected countries.

3. New technological developments

The newly-launched very high-resolution satellites may provide data at a much higher resolution and are therefore better placed for tracking desertification. However, this will correspondingly require more powerful computers to handle the increased volume of data. These systems are already providing more information on land conditions than was previously possible.

Plans were also noted to launch high spectral resolution satellite systems for capturing more information on parameters necessary for predictive modelling.

4. Conclusions

In conclusion the panel agreed that:

- Long term data series (such as NDVI) and matching of different remote sensing technologies have recently made available a number of new applications. They have added value to scientific and decision-making processes at a global level, as well as contributing to better understanding of global land degradation issues, and to linkages between land degradation, climate change and modelling.

- Proof of land degradation through remote sensing is often useful to decision makers, in order to target investments.

5. Recommendations

(a) Capitalize on the experience of operational drought early warning systems in using remote sensing to track indicators which are also used to assess desertification namely, rainfall, vegetation, and land use;

(b) Capitalize on remote sensing and geographic information system experiences in assessing desertification through a wide range of physical, biological, social, and economic indicators;

(c) Improve the understandability and accessibility of remote sensing products for decision makers and end-users;

(d) Promote dialogue between scientists and decision-makers at strategic decision points, especially during the NAP process;

(e) Integrate local communities in monitoring and assessment programs;

(f) Integrate traditional knowledge into monitoring and assessment activit es.

IV. MECHANISMS TO FACILITATE AN EXCHANGE OF INFORMATION BETWEEN SCIENTIFIC AND TECHNOLOGICAL INSTITUTIONS, IN PARTICULAR FOCUSING ON NATIONAL AND SUBREGIONAL NETWORKS ON THE PREDICTION OF DROUGHT AND MONITORING OF DESERTIFICATION

The regional thematic programme networks (TPNs) that have been developed under the UNCCD offer useful frameworks for promoting information exchange. In accordance with UNCCD regional annexes, Africa, Asia, Latin America and the Caribbean, the Northern Mediterranean and Eastern and Central Europe have been developing TPNs on specific topics. An overall review was presented to the panel on institutions offering mechanisms to facilitate the exchange of information between scientific and technological institutions, in particular focusing on national and subregional networks, for the prediction of drought and the monitoring of desertification. It was noted that the roles of such scientific and technological institutions under review are:

- data collection, accessibility, and integration
- evaluation and prediction of drought and desertification and measures for preparedness
- dissemination of information to end-users on the application of EWSs and desertification monitoring and assessment, and strengthening appropriate response mechanisms
- research institutions producing information
- research institutions monitoring basic processes

Analysis showed that there are some differences in the institutional arrangements from one region to another due to historical and environmental situations and differences in priorities set by those regions.

1. Conclusions

The panel observed that a number of the networks cited showed some characteristics or indications which encompassed some key factors for a successful network: set clear common goals; establish well-defined intermediate goals to ensure feelings of progress; and encourage strong leadership.

The panel noted that the following categories of actors need to be recognized as partners in the networks at every level of operation. These actors involved in networks include, among others:

(a) Non-governmental organizations (NGOs);

(b) Local communities;

(c) Grassroots organizations;

(d) Government technical agencies;

(e) Political decision makers;

(f) The private sector;

(g) Research institutions;

(h) Educational institutions;

(i) International organizations.

2. Recommendations

(a) Move from a project to a programme approach, first establishing frameworks in the context of national, subregional, and regional action programmes;

(b) Reinforce or establish communication mechanisms by promoting direct contact among individuals representing the relevant institutions, and by providing the proper technical means, such as data bases, meta-data bases, and e-mail lists;

(c) Facilitate free access to data and information, through negotiating frameworks, with definite rules for direct and innovative arrangements and with

guidelines developed by regional, subregional and national organizations and networks;

(d) Cultivate clear agreements on institutional networking and on responsibilities and leadership at the regional, subregional and national levels;

(e) Promote ownership by network members, for example through common publications, Web sites, and other communication mechanisms;

(f) Enhance capacities through technical assistance and training.

V. MORE DETAILED MEASURES FOR DROUGHT AND DESERTIFICATION PREPAREDNESS, IN COOPERATION WITH THE APPROACHES, FROM HAZARD PROTECTION TO RISK MANAGEMENT, ADOPTED BY THE INTERNATIONAL STRATEGY FOR DISASTER REDUCTION (ISDR)

The similarities of both the International Decade for Natural Disaster Reduction (IDNDR) and the UNCCD processes with regard to minimizing the impacts of natural disasters, particularly drought, were considered. This has created an opportunity to develop synergies and linkages between the UNCCD and ISDR (which succeeded IDNDR in 1999) in areas of drought and desertification. The main point to be noted is the ISDR's goal of moving from short-term disaster protection approaches to risk management strategies which focus on disaster prevention in the long-term, and which embrace sustainable development. It was also noted that the UNCCD promotes sustainable development and encourages the inclusion of NAPs in National Development Frameworks.

The purpose of the national action programmes is to identify the factors contributing to desertification and also the practical measures necessary to combat desertification and mitigate the effects of drought. Consequently, national action programmes constitute the fundamental framework for desertification preparedness.

The socio-economic and political impacts of drought have a long history in some drylands of the world. In recent years, it has been shown that the economic impact of drought can be very serious. It causes serious social disruption, reduced food and crop production, health problems, reduced hydropower generation, conflicts over resources and political insecurity. This is in spite of the fact that droughts are expected events, for example in arid and semi-arid regions in Africa.

To overcome some of these problems, especially in the use of information for planning purposes, participatory planning in EWSs was considered. This approach emphasizes the importance of involving the people at risk, the communication and exchange of information, methods of raising awareness, planning, and participatory monitoring and evaluation. In order to identify a realistic assessment of local situations and to ensure ownership of measures to be taken, EWSs should not be based entirely on scientific and technical information, but should include communities at risk as well.

1. Conclusions

- Existing and even improved EWSs in Africa have not necessarily led to effective drought mitigation
- Weaknesses in the EWSs include: (a) weakness in EWSs information dissemination and use, (b) institutional constraints including coordination problems, (c) logistical constraints leading to untimely responses, (d) political constraints and (e) the lack of inclusion of participatory planning approaches
- Few countries are systematically adopting drought risk management approaches instead of continuing with drought hazard protection
- The use of EWS data and information for long-term national development programmes and strategies intended to minimize or prevent drought and desertification hazards is not apparent. In other words, information on drought and desertification is not used adequately in national planning
- There are few examples of measures being undertaken for desertification preparedness, although examples relating to drought preparedness abound

2. Recommendations

Detailed definitions of, and measures for, desertification preparedness and for combating desertification must be part of the NAP process. Because the NAP process is a consultative process which includes all stakeholders, the guiding principles for such measures are:

(a) Create appropriate conditions for the participation of local resource users in the planning, implementation and evaluation of local action programmes;

(b) Create appropriate conditions for decentralization of decision-making in land management;

(c) Create appropriate mechanisms for funding at the local level;

(d) Assure communication and consultation among key stakeholders;

(e) Reinforce local capacities through training and the sharing of experiences;

(f) Negotiate partnership arrangements;

(g) Arrange appropriate NAP monitoring and evaluation mechanisms.

In accordance with these principles, the panel recommends that organizations carry out desertification assessment and monitoring in the context of desertification preparedness plans, especially through vulnerability and risk assessments which would estimate the possible magnitudes of problems within different scenarios. This approach should facilitate the preparation of suitable local interventions and action programmes to combat the problems.

Achieving this form of desertification preparedness depends on the following:

(a) Surveying existing information;

(b) Using scientifically sound information on desertification which integrates traditional knowledge;

(c) Establishing feedback mechanisms with local and grassroots organizations;

(d) Integrating cultural considerations into desertification countermeasures.

All countries host a range of institutions for national development. Appropriate synergies between these institutions and the principal actors involved in the NAP, especially local resource users, research and development institutions engaged in desertification activities, administrative offices and local representatives, could produce more effective responses to prepare for, and to combat desertification.

Annex 1

PARTICIPANTS AT THE AD HOC PANEL MEETING ON EARLY WARNING SYSTEMS

Members of the ad hoc panel

Ms. Nana Bolashvili	Georgia
Dr. Edmundo Garcia Moya	Mexico
Mr. Abdellah Ghebalou	Algeria
Dr. Ali Umran Komuscu	Turkey
Mr. Octavio Perez Pardo	Argentina
Dr. Valentin Sofroni	Moldova
Dr. Anneke Trux	Germany
Dr. Kazuhiko Takeuchi	Japan

Consultant

Mr. Ruben K. Sinange	Kenya

Experts of relevant institutions

Mr. Alhassane Adama Diallo	Centre Regional AGRHYMET, Niger
Dr. Patrick Gonzalez	U.S. Geological Survey, the United States of America
Dr. Patrick Hostert	University of Trier, Germany
Dr. Amal Kar	Central Arid Zone Research Institute, India
Mr. Haruo Miyata	Global Environment Forum, Japan
Dr. Tadakuni Miyazaki	Yamanashi Institute of Environmental Science, Japan
Ms. Hortense Palm	Organisation Internationale de Recherche et de Formation Technique, Mali
Dr. Masato Shinoda	Tokyo Metropolitan University, Japan

Annex II

DOCUMENTS SUBMITTED TO THE AD HOC PANEL ON EARLY WARNING SYSTEMS

Background documents

1. Decision 14/COP.4 (Early warning systems)

2. ICCD/COP(4)/CST/4 (Report of the ad hoc panel on early warning systems)

3. Document ICCD/COP(3)/CST/6 (Early Warning Systems: existing experiences of Early Warning Systems and specialized institutions operating in this field)

4. Towards an Early Warning System for Desertification. Dr. Amal Kar and Dr. Kazuhiko Takeuchi, The University of Tokyo, Tokyo, Japan.

5. Advances in Desertification Monitoring and Drought Early Warning. Dr. Patrick Gonzalez, U.S. Geological Survey, Washington, D.C., U.S.A.

6. Mechanisms to facilitate an exchange of information related to early warning systems between scientific and technological institutions, in particular focusing on national and subregional networks, for the prediction of drought and monitoring of desertification. Mr. Haruo Miyata, Global Environmental Forum, Tokyo, Japan.

7. Measures for drought and desertification preparedness, with particular reference to African countries. Mr. Ruben Sinange, Nairobi, Kenya.

Conference room documents

1. Remote Sensing Driven Early Warning Systems for Desertification and Land Degradation, Results and Conclusions from DeMon-II: An Integrated Approach to Assess and Monitor Desertification Processes in the Mediterranean Basin. Department of Remote Sensing, Faculty of Geography and Geosciences, University of Trier, Trier, Germany.

2. Proceedings of UNCCD Regional Meetings for Asia, Beijing, China, July 22-27, 1999: Asia-Africa Technical Workshop on Early Warning Systems held from 22-23 July, 1999.

3. La Planification Participative dans le Système d'Alerte Précoce. Ms. Hortense Palm, Bamako, Mali.

4. Système d'Alerte Précoce: Contribution du Centre Regional AGRHYMET. Mr. Alhassan Adama Diallo, Niamey, Niger.

Annex III

AD HOC PANEL MEETING ON EARLY WARNING SYSTEMS
Fuii-Yoshida City, Japan, 4-8 June 2001

Agenda

Location: Yamanashi Institute for Environmental Sciences, Fuji-Yoshida City, Yamanashi Prefecture, Japan

Monday, 4 June 2001

09.30 - 10.00	Registration
10.00 - 10.45	Opening session - Opening remarks by:

Mr. Hidetoshi UKJTA, Director for the Global Environment Division, Ministry of Foreign Affairs, Japan

Mr. Katsunori SUZUKI, Director for the Global Environmental Issues Division, Ministry of the Environment, Japan

Mr. Kimihiko NAGANUMA, Deputy Director General, the Yamanashi Prefecture on behalf of Mr. Ken AMANO, Governor of the Yamanashi Prefecture

Mr. Ahmed Cissoko, Senior Scientific Advisor, United Nations Convention to Combat Desertification

10.45 - 11.00	Coffee break
11.00 - 11.30	Opening remarks by Chairman of ad hoc panel
11.30 - 11.40	Remarks by the Representative of the UNCCD secretariat
11.40 - 12.30	Appointment of Topic Chairs and Rapporteurs
12.30 - 14.00	Lunch break

Topic 1: Critical analysis of the performance of early warning and monitoring and assessment systems, linking traditional knowledge and early warning systems, especially in the areas of the collection of data, dissemination of information and measuring for drought preparedness.

14.00 - 15.00	Presentation of Topic 1
15.00 - 16.15	Discussion of Topic 1
16.15 - 16.30	Coffee break
16.30 - 17.30	Discussion of Topic 1

Tuesday, 5 June 2001

Topic 2: Methods for and approaches to the prediction of drought and monitoring of desertification, particularly the method of analyzing vulnerability to drought and desertification, especially at the local, subnational and national levels, with special regard to new technological developments.

09.00 - 10.00	Presentation of Topic 2
10.00 - 11.00	Discussion of Topic 2
11.00 - 11.15	Coffee break
11.15 - 12.30	Discussion of Topic 2
12.30 - 14.00	Lunch break
14.00 - 16.00	Working groups on Topics 1 and 2
16.00 - 16.15	Coffee break
16.15 - 17.30	Conclusion of Topics 1 and 2

Wednesday, 6 June 2001

Topic 3: Mechanisms to facilitate an exchange of information between scientific and technological institutions, in particular focusing on national and subregional networks on the prediction of drought and monitoring of desertification

09.00 - 10.45	Presentation of Topic 3
10.45 - 11.00	Coffee break
11.00 - 12.30	Discussion of Topic 3
12.30 - 14.00	Lunch break

Topic 4: More detailed measures for drought and desertification preparedness, in cooperation with the approaches, from hazard protection to risk management, adopted by the International Strategy for Disaster Reduction

14.00 - 16.00	Presentation of Topic 4
16.00 - 16.15	Coffee break
16.15 - 17.30	Discussion of Topic 4

Thursday, 7 June 2001

09.00 - 10.45	Working groups on Topics 3 and 4
10.45 - 11.00	Coffee break
11.00 - 12.30	Conclusion of Topics 3 and 4
12.30 - 14.00	Lunch break
14.00 - 16.00	Drafting
16.00 - 16.15	Coffee break
16.15 - 17.30	Drafting (continuation)

Friday, 8 June 2001

09.00 - 11.30	Drafting conclusion by Rapporteur of AHP/EWS
11.30 - 12.15	Adoption of the Report
12.15 - 12.30	Closing ceremony
12.30 - 14.00	Lunch break
14.00 - 17.30	Field visit (experimental sites on reforestation and biodiversity)

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UNITED
NATIONS

Convention to Combat
Desertification

Distr.
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20 August 2001

ENGLISH
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CONFERENCE OF THE PARTIES
Committee on Science and Technology
Fifth session
Geneva, 2-4 October 2001
Item 4 of the provisional agenda

PROPOSALS ON HOW TO REVISE THE NATIONAL REPORTS HELP GUIDE, WITH THE AIM OF PROVIDING GUIDANCE TO PARTIES TO ENSURE THAT THE ACTIVITIES OF SCIENTIFIC COMMUNITIES AND INSTITUTIONS ARE BETTER REFLECTED IN THEIR NATIONAL REPORTS

Note by the secretariat

1. On the recommendation of the Committee on Science and Technology, the Conference of the Parties requested the secretariat of the Convention to revise the National Reports Help Guide to enable Parties to ensure that the activities of scientific and technical institutions and communities were better reflected in their national reports (decision 10/COP.4, of 22 December 2001, paragraph 7).

2. Pursuant to paragraphs 5 and 6 of that decision, the secretariat proposes the inclusion, in the table entitled "Strategies and priorities established within the framework of sustainable development plans and/or policies" of document ICCD/COP(3)/INF.3, of new indicators, evaluation parameters and other elements. This revision will enable Parties to include in their national reports information on scientific and technical desertification control activities undertaken at all levels, and to incorporate information on progress achieved in implementing the recommendations of the Committee on Science and Technology.

3. The Committee may wish to consider this revision, contained in the annex to the present note, and to make suggestions on material for final inclusion in document ICCD/COP(3)/INF.3.

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Annex

Proposed additions to the table on item (iii): Strategies and priorities established within the framework of sustainable development plans and/or policies

Indicators	Evaluation parameters	Remarks	Questions
Scientific and technical desertification control activities	Listing, adapting and integrating scientific and technical activities into the NAP	Scientific and technical activities should be analysed to verify their compliance with the principles of the Convention Adaptation and integration of technical and scientific programmes in the NAP and national reports for consideration by the Conference of the Parties	• Which scientific and technical activities relating to desertification control and drought mitigation have been identified under the NAP? • Have the scientific and technical desertification control activities been considered with a view to determining their conformity with the principles of the Convention? If so, how and by whom was this done? • What proposals have been made to integrate the scientific and technical community in the NAP process? • What arrangements have been made to adapt the scientific and technical activities under way to the NAP process? • Have the scientific and technical desertification control activities specifically recommended in the NAP been implemented, what progress have they made and what are their results and impact? • What consultation procedures have been implemented with the scientific and technical community? • What mechanism has been set in place to facilitate consultation?

Indicators	Evaluation parameters	Remarks	Questions
Implementation of the recommendations of the Committee on Science and Technology	Assessment of progress made in implementing the recommendations of the Committee on Science and Technology Number of activities and recommendations of CST used in combating desertification and mitigating the effects of drought, for example: • Development and use of benchmarks and indicators which should not be only physical and biological, but also address institutional matters, including legislative, social and economic issues, such as the qualitative and quantitative assessment of the participation of civil society; • Promotion, use and enhancement of traditional knowledge; • Use or need to use early warning systems for drought management; • Training and field studies to identify pilot sites to be used in supplementing information and data on desertification generated by such advanced technology as remote sensing and geographical and environmental information systems	In presenting essential activities, projects and programmes under way or envisaged to address the underlying causes or to remedy the visible effects of desertification, with a view to drawing lessons and to popularizing the scientific and technical methods used, it is recommended that the following points be stressed: • Illustration of South-South and North-South collaboration activities, highlighting the advantages of information exchange and the transfer of technology and technical know-how; • Presenting strategies and approaches used to collect, popularize and disseminate information with a view to mobilizing and raising awareness and promoting, using and enhancing traditional knowledge in order to combat desertification; • Presenting existing or envisaged methods and activities based on synergy or collaboration with other multilateral environmental agreements, in particular, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change	What lessons have been drawn from implementing the recommendations of CST, in particular in respect of the following: • Benchmarks and indicators; • Traditional knowledge; • Early warning systems; • Training and field studies to identify pilot sites? What use has been made of experts from the roster of independent experts drawn up by the secretariat?

UNITED
NATIONS

Convention to Combat
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Geneva, 2-4 October 2001
Item 9 of the provisional agenda

STRATEGIES FOR THE COMMUNICATION OF INFORMATION AND ITS USE TO GENERATE BEST PRACTICES FOR COMBATING DESERTIFICATION AND MITIGATING THE EFFECTS OF DROUGHT

Note by the secretariat

1. According to decision 16/COP.4, as part of its work programme, the Committee on Science and Technology will examine at its fifth session "strategies for the communication of information and its use to generate best practices for combating desertification and mitigating the effects of drought".

2. By this same decision, Parties and observers were invited to contribute case studies illustrating the communication of best practices relating to the above theme, which should not exceed ten pages in length, and which should be transmitted to the UNCCD secretariat no later than 30 June 2001.

3. Parties and observers were encouraged in their reports to include short accounts of traditional and scientific knowledge produced in various thematic fields relative to the issue of combating desertification, and strategies or mechanisms used for the communication and evaluation of the process, if available.

4. According to this decision, the secretariat was requested to prepare a synthesis of such reports for consideration at the fifth session of the CST.

5. As described in the annex to decision 16/COP.4, these strategies should include concepts of collection, analysis, synthesis and exchange of traditional and scientific knowledge, as given below:

(a) The objective should be to establish specific effective communication procedures to combat desertification.

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(b) Communication procedures involve at least a two-way flow of information. Therefore, information should not only be transferred from scientists to the grassroots level, but also from local communities to scientists, extension workers, policy makers and other users of information.

(c) Use implies the acceptance, interpretation, adaptation and utilization of such knowledge for the specific local environment or situation.

(d) Best practices refer to those procedures that are successful. The goal is to make use of those experiences as well as the information that flows from them, by sharing them with other similarly affected or interested Parties. This refers to all best practices from a very specific situation, such as erosion control or catchment management, to wider issues such as land-use planning and policy formulation.

(e) It is recommended that case studies on best practices, taking into account both traditional and scientific knowledge, should be produced in various thematic fields relative to the issue of combating desertification.

6. Two submissions were received from Parties and observers, respectively Canada and the Sahara and Sahel Observatory (OSS) and are annexed to this document.

SYNTHESIS OF SUBMISSIONS

7. According to one submission, although a sizeable body of data, information and products relating to the environment exists, the information is difficult to utilize for three main reasons: (i) the results of data collection and processing are disseminated among only a limited number of users, (ii) the products generated are not transformed into information that can be directly used by decision-makers, and (iii) the information is dispersed, restricted, and difficult to access by users, at both the national and international levels, owing to a lack of suitable mechanisms for the circulation of information.

8. This same submission, which focuses on environmental information systems in general, rather than being specific to desertification, promotes the concept of an "Environmental Information Circulation and Monitoring System on the Internet (SISEI)", which is defined as "an environmental information management tool to assist in implementing the legal instruments relating to the environment in Africa". The SISEI takes the form of a web site which serves as an environmental gateway at the national, subregional and regional levels, comprising several specialized gateways such as an institutional gateway, a thematic gateway, a virtual library, and a virtual map library.

9. The SISEI concept consists of three components, taken in parallel, namely institutional, technical and scientific components. The first is based on a participative approach through partnership between the different players and information generators. It aims to foster the establishment of an institutional framework linking the various levels and conducive to the circulation and exchange of information. The technical component is primarily aimed at strengthening capacities at various levels for the development of communication infrastructure. The scientific

component aims to update, adapt and transfer new methods and products, harmonize tools and formats, and avoid a further widening of the digital divide.

10. An assessment of five SISEI pilot projects was conducted, and a number of obstacles identified. It is important to note that the SISEI projects were integrated into an existing institutional framework, in order to reinforce the established mechanisms. The findings identified a lack of infrastructure and technical capacity within the countries (limited bandwidth) and difficulties in accessing such capacities, insufficient funds for the purchase of equipment, which limited the participation of players and the dissemination of SISEI products, and difficulties in updating of the SISEI by the partner institutions.

11. In the second submission, the Party "is careful to identify its main audiences (both domestic and international) and their needs, and to target appropriate communication messages in a format that ensures delivery". As an example, the more appropriate medium of radio was selected to communicate information to farmers in developing countries about desertification.

12. This same submission recommends the development of communication plans which are updated regularly; it also outlines the main messages to be conveyed, and identifies planned actions to be undertaken by partners for a specific period of time. Communication plans help to ensure the coordination of relevant activities.

13. The submission also notes the importance of synchronizing the communication messages of governmental and non-governmental organizations involved in combating desertification, in order to ensure that the messages are heard and understood. This is particularly practical when budgetary constraints exist.

14. The Party also recognizes that communication strategies evolve over time, and must be modified and updated accordingly. For example, initially the Party embarked on a variety of public awareness activities to promote the UNCCD, and to highlight the problem of desertification in developing countries, and the Party's response to it in the context of its official development assistance programme. As the issue of desertification and the Convention became better known, communication efforts shifted towards dealing more with the substantive issues related to desertification, and to illustrating how people and communities could make a difference.

15. The submission also recognizes the need for diverse approaches within communication strategies over time. Rather than focusing on the negative "disaster appeal" typically associated with the devastation of desertification, which may be appropriate at a certain time, the Party adopted a communication strategy which promoted success stories; the Party also developed material which attempted to "popularize the science" of combating desertification.

16. This submission notes the variety of communication products which have been created, promoted and distributed, including: publications, fact sheets, tool kits, media information, classroom materials, videos, a film and a CD-ROM. Other activities cited are Parliamentary and Ministerial briefings, the establishment of web sites, and the organization of special events, such as celebrations on June 17 to mark the World Day to Combat Desertification.

17. Based on lessons learned from field experience in the Sahel, the submission identifies as critical to success the need to ensure the participation of the local population, not only in concrete actions on the ground, but also in the decision-making process concerning the choice and the implementation of communication interventions. Communication is the tool which can facilitate this participation. While noting that the majority of the communication strategies on desertification used to date stress the diffusion of information and messages of persuasion and mobilization, the Party suggests that these actions have had little real impact on the participation in and implementation of concrete actions by the community, and recommends the development of an experimental communications strategy which supports and reinforces community participation.

Annex

COMPILATION OF SUBMISSIONS

1. Canada

Strategies for the communication of information and its use to generate best practices for combating desertification and mitigating the effects of drought

Introduction

This paper is Canada's input as per decision 16/COP.4 on the programme of work of the Committee on Science and Technology, which provides that the CST will, at its fifth session, give particular attention to strategies for the communication of information and its use to generate best practices. Parties are required to provide input, including examples, to the secretariat.

As mentioned in the annex to the above-mentioned decision, these strategies include concepts of collection, analysis, synthesis and exchange of information, including traditional and scientific knowledge. Their objective should be to establish specific communication procedures to combat desertification, and to involve at least a two-way flow of information between stakeholders.

This submission to the CST will summarize Canada's approach to communications, highlighting main messages and some of the key communications activities used to date to combat desertification both domestically (in terms of Canada's affected country status) and in partnership with developing countries, undertaken with the support of official development assistance (in response to our status as a donor country).

Background

The Government of Canada mandated the Canadian International Development Agency (CIDA) to serve as the lead agency for the implementation of the Convention, along with the International Development Research Centre (IDRC). As the lead, CIDA is recognized as the focal point for the channelling of all information relating to the Convention, and is responsible for developing communication systems in order to ensure that Canadians (the public, non-governmental organizations (NGOs), industry and the private sector and the scientific and research community, as well as other federal and provincial government departments) are informed of the Convention and, more generally, about the problem of desertification and possible solutions.

Strategy

In order to meet its communications obligations and objectives effectively, and to ensure that communication-related activities are undertaken in a coordinated way, CIDA has developed a series of Communications Plans. These Communications Plans, which are updated regularly, detail the main messages to be conveyed and planned actions to be undertaken (for a specific period) by the Government of Canada (particularly CIDA and IDRC), and in cooperation with its partners. They have proven to be an effective tool

in systematically guiding the approach to communications and appropriate activities to be undertaken.

An important component of Canada's strategy is to synchronize the communication messages of governmental and non-governmental organizations to ensure that the messages are heard. To do so, the Government of Canada works closely with the Solidarité Canada Sahel (SCS), an umbrella organization representing over 30 development and NGO partners involved in combating desertification. SCS was recently selected by the NGO community to host the International NGO Network on Desertification (RIOD) secretariat.

The evolution of Canadian communication messages

Canada's early communications efforts (prior to and immediately following the Convention's entering into force) focused largely on making the Convention known and explaining the national obligations involved. Canada embarked on a variety of public awareness activities on the problems of desertification in developing countries, and promoting the Convention. Communication efforts were designed to advance clear messages about the Convention and Canada's response in the context of its official development assistance programme.

As the problem of desertification and the Convention became more well known, Canada's communications efforts shifted towards dealing with more of the substantive issues of desertification and how people and communities affected by it can make a difference. The strategy adopted in the 1999/2000 Communications Plan was to try to put a positive spin on success stories, rather than focusing on the negative "disaster appeal" typically associated with the devastation of desertification. Under this plan, CIDA committed to using a positive educational approach (supporting projects targeting youth and contributing to building awareness in civil society), and IDRC worked with the media to "popularize the science" of combating desertification through the creation of a variety of video, media-briefing and Internet material. The thrusts were to focus on the impact that science can have on combating desertification, and to emphasize the need to target and focus concern, inform decision-makers and raise awareness about what can be done.

In developing its communications strategies, Canada is careful to identify its main audiences (both domestic and international) and their needs, and to target appropriate communication messages in a format that ensures delivery. For example, the more appropriate medium of radio is used to communicate information to farmers in developing countries (Canada worked with the Developing Countries Farm Radio Networks to prepare a series of scripts on sustainable agriculture, desertification and the Convention, which were distributed to broadcasters in 120 countries (described below).

Communications activities

To build public awareness and raise the profile of desertification, a broad array of communications activities have been carried out over the years by CIDA, IDRC, the Prairie Farm Rehabilitation Administration (PFRA) and their partners in the voluntary sector. Products created, promoted and distributed for use at home and overseas have included: publications, fact sheets, tool kits, media information, classroom materials,

videos, a film and a CD-ROM presentation. Other activities have included Parliamentary and Cabinet briefings, web sites, and holding special events to mark June 17 - World Day to Combat Desertification. A summary of some of the main communication pieces created by CIDA and its partners is provided below, and details of activities carried out can be found in the Appendix.

Canada also responds to its reporting obligations under the Convention through the preparation of various communication pieces such as its National Report (*Desertification: A Canadian Perspective* (Aug. 1999)), its first domestic report on its activities relevant to the Convention to Combat Desertification (*Desertification: A Perspective on Canada* (Nov. 2000)), and by responding to additional ad hoc requests such as the Early Warning Systems Report to the CST. These important communication pieces are available on CIDA's desertification web site, as well as the UNCCD site.

Examples of Canada's communications-related activities

CIDA

CIDA, through its Official Development Assistant Program (ODA), has an important role to play in assisting developing countries to address the problem of desertification and implement the Convention. To do so, it works bilaterally with affected countries, supports a variety of NGO partners, and supports the activities of numerous international institutions which are key actors in the global effort to combat desertification. The following are some examples of some of CIDA's communication-related activities:

- CIDA maintains a bilingual (English and French) web site dedicated to desertification (http://www.acdi-cida.gc.ca/desertification-e.htm) which provides general information on desertification and on Canada's role in the global fight against it. The site contains a variety of documents on the Convention, offers answers to a series of questions indicating how the private and public sectors can get involved in the Convention, and provides links to other interesting sites.

- CIDA is in the process of developing an internal web site as a tool to enhance communications within CIDA and between CIDA staff at headquarters and those at various posts around the world. The goal of this site is to increase awareness of the Convention and the issues of desertification, and to provide CIDA programmers with access to key reference materials, tools and guidelines for developing and/or integrating effective desertification components into their programmes, as well as to provide a forum for Agency-wide discussions for the sharing of ideas and information on best practices and lessons learned.

- With relevant stakeholders, CIDA produced Canada's first domestic report on its activities relevant to the Convention to Combat Desertification, entitled *Desertification: A Perspective on Canada* (Nov. 2000). This report, which has been revised for electronic publishing, is available on CIDA's desertification web site at http://www.acdi-cida.gc.ca/desertification-e.htm as well as on the UNCCD site.

- The publication of two reports focusing on Canada's commitment to the Convention through its international work, namely; *Desertification: Meeting the Challenge - Canada's commitment to the United Nations Convention to Combat Desertification* (1997); and *Desertification: A Canadian Perspective - Canada's 1st Official Report on the Implementation of the United Nations Convention to Combat Desertification* (1999).

- CIDA has contributed to a variety of projects in developing countries to help them with communications activities relating to the UNCCD, such as supporting the national action programme (NAP) processes in Senegal, Mali and Burkina Faso by providing financial and technical assistance, including components for carrying out public consultations.

Prairie Farm Rehabilitation Administration

The Prairie Farm Rehabilitation Administration (PFRA) of Agriculture and Agri-Food Canada (AAFC), working in close cooperation with provincial governments, has an important role in addressing desertification issues in Canada. PFRA has undertaken numerous communication-related activities to collect and disseminate information on land degradation and best practices for combating desertification and mitigating the effects of drought in the Canadian prairies. Examples include:

- Research for and publication of the report *Prairie Agricultural Landscapes: A Land Resource Review* (2000). This study was designed to help focus and direct the PFRA's future programmes and activities centered on sustainable land use by examining emerging environmental issues, geographic distribution of different farming systems, and economic and resource data. The report was prepared by PFRA with the input of many authors and a panel comprising agricultural producers and academics. This report is available on-line on their web site at http://www.agr.ca/pfra/pub/pallande.htm (English) http://www.agr.ca/pfra/pub/pallandf.htm (French).

- AAFC-PFRA operates a Drought Watch Programme which serves as an early warning system for affected Canadian farmers. The goals of the programme are: (1) to provide timely information of the impacts of climatic variability on water supply and agriculture on the Prairies, and (2) to promote ideas and activities for groups/individuals to reduce drought vulnerability. Recognizing that monitoring the impacts on water supplies, soil degradation and agricultural production is essential to preparedness for dealing with possible drought conditions, through a series of regularly updated maps available on their web site they provide users with an overview of the risk of drought in Western Canada. Information on the Drought Watch Programme can be found at http://www.agr.ca/pfra/drought.htm.

- To help share information and best practices for others to learn from, PFRA maintains a list of success stories on its web site - http://www.agr.ca/pfra/growth/feature/index.htm.

- PFRA also produces a variety of newsletters, fact sheets and various other publications which are available through their web site http://www.agr.ca/pfra/publice.htm#news. Past issues have covered topics such as:

Community pasture drought checklist, Agricultural best management practices, and Prairie soils: the case for conservation.

IDRC

IDRC, a public corporation created by the Canadian government to help communities in the developing world find solutions to social, economic, and environmental problems through science and research, maintains information on networks and forges links which allow Canadians and their partners to benefit equally from a global sharing of knowledge. One of IDRC's objectives is to mobilize and strengthen indigenous research capacity in developing countries. IDRC has extensive experience in drylands issues and a long history of programming to combat desertification. IDRC has produced numerous case studies and reports on desertification, some notable examples of which include:

- A series of reports on drylands and desertification (*Reports Magazine*, July 1994; Volume 22, Number 2)

- *Grassroots Indicators for Desertification Experience and Perspectives from Eastern and Southern Africa* (1996), edited by Helen Hambly and Tobias Onweng Angura.

Two projects in particular present excellent case studies of recent IDRC work in support of communication success stories.

Water conflicts resolution through participatory communication in Burkina Faso

The principal objective of the first phase of this project was to work out and establish a participative control programme for the management of conflict relating to water use in the Nakambe River basin in Burkina Faso. Data was collected through on-the-ground documentation and investigation (July 1999 - April 2000). A specific guide of communications with the various community groups and for a process of village animation was developed in order to identify the various conflicts arising from water use. In a second step, the researchers examined and analysed the results of the investigations (May-August 2000). On the basis of this compilation (data on history, ethnicity, religions, numbers and situation of water points, conflicts, solutions suggested by stakeholders, established solutions, position of the village compared to the ecosystem, etc.), a monographic text was produced for each village. As a third step, a round table meeting of the stakeholders was organized in September 2000 to discuss the conflicts identified by the investigators, and to validate the information and discuss solutions.

A second phase is being developed, based on the considerable work of the researchers and the community. The research will continue to focus on the resolution of conflicts relating to water, but will also stress, in particular, the development of communication strategies appropriate for the various groups of users and the development of a strategy of know-how transfer. Indeed, research showed that the conflicts connected to water uses originated in four specific problems: the lack of water points, the lack of communication at the base between the various users, the lack of appropriation of the work by the population, and the lack of maintenance of the water points. The development of suitable communication strategies would make it

possible to face the last three problems and to inform the appropriate authorities of the situation concerning the first problem. These strategies of communication would play a significant role in the circulation of experience and knowledge regarding the use of water, health and hygiene, village management of water points, and appropriation by the peasants of the wells and boreholes. Work would be done in the 19 villages targeted in the first phase of research along the Nakanbe River. A CIDA project supporting local initiatives in Burkina Faso (for equipment and installation of wells and boreholes) and the Social Communication Network of Burkina will also collaborate in this research.

Participatory communication for community actions against desertification in the Sahel

One lesson learned from past field experience in the fight against desertification in the Sahel is that one of the most significant factors in success is the participation of local populations in the concrete actions carried out on the ground, and in decision-making concerning the choice and the implementation of these interventions. Communication is the tool which can facilitate this participation. However, the majority of the communication strategies used so far in the framework of the actions against desertification stress the diffusion of information and messages of persuasion and mobilization. These actions have only little real impact on participation by the communities and concrete development action. It is necessary to develop an experimental communication strategy which supports and reinforces community participation.

The project supports action research to develop strategies of participative communication with local populations and organizations in order to involve them actively in the processes of evaluation and realization of the decisions made. Associated closely with grass roots actors, action research allows experimentation strategies of communication in the context of real conditions and the analysis of their factors of difficulties and success. Lessons learned are shared with the organizations responsible for the implementation of the UNCCD in Sahelian countries. A set of regional round tables brings together those in charge of communication in these organizations to discuss the case studies and the experimental communication strategies, to make recommendations for the establishment of communication strategies in the various countries of the Sahel, and thus to ensure a regional impact of the experience arising from the project.

Other Canadian initiatives

The Canadian Government has also undertaken a variety of activities which, although not directed specifically towards combating desertification, do have a role in educating Canadians about the issues, and in helping to provide access to reliable information to aid in decision-making relating to environmental issues. Three notable examples include:

- The Canadian Information System for the Environment (CISE), currently under development, which would help all levels of Canadian society to gain access to reliable information which they need in order to make informed decisions relating to the environment. A Task Force was established by the Environment Minister to provide advice

on the design and implementation of such a system. Following the release of its interim report (www.ec.gc.ca/cise), the Task Force is undertaking consultations with Canadians to explore the views and environmental information needs of citizens, non-governmental organizations, businesses, institutions and governments before submitting their final report this autumn (2001). CIDA is working with the Task Force to ensure that information on desertification is incorporated into this information system.

- As Canada is a Party to numerous international environmental agreements, Canada's Commissioner for the Environment and Sustainable Development established a data base of Canada's international environmental commitments. This data base provides users with key information about some of the agreements Canada is a Party to, and its commitments under them. The Desertification Convention is among those listed in this database, which can be found on the Internet at (http://www.oag-bvg.gc.ca/domino/env_commitments.nsf/homepage).

- The new Canada and the World Pavilion, a national museum which opened in Ottawa in 2001, highlights some of the work that Canada is doing to combat desertification internationally through its aid programme.

There is also a strong Canadian contribution to global policy knowledge and current affairs through Canada's support of a variety of journals and bulletins. One notable example is the International Institute for Sustainable Development (IISD) linkages site. Linkages has a section devoted to the UNCCD (http://www.iisd.ca/desert.html), which provides a summary of the Convention and meetings to date. IISD's *Earth Negotiations Bulletin* provides balanced, objective and informative summaries of UNCCD events and negotiations. Information is provided in hard copy to meeting participants, and is published on its web site for access by anyone around the world.

A similar initiative supported by Canada is undertaken by the Observatoire de l'écopolitique internationale (Université du Québec à Montréal) together with the Institut de l'énergie et de l'environnement de la Francophonie (IEPF), to publish *Objectif Terre*, a quarterly magazine dedicated to monitoring progress and events relating to sustainable development and international environmental conventions, with particular attention to audiences in francophone countries (http://www.iepf.org/ressources/objectif_terre.asp).

NGO partners

Many Canadian NGOs are actively involved in the efforts to combat desertification, and play an important role in communicating desertification messages and getting people involved both in Canada and abroad. Some notable activities include:

- The production of public service announcements (French and English) featuring prominent Canadians which are disseminated across Canada.

- The production of teaching videos, targeting Canadian school children in affected areas, which explain and demonstrate techniques to combat desertification as well as promoting various school writing and video exchanges.

- The conducting of various awareness-raising activities in connection with World Day to Combat Desertification, such as SCS holding an international NGO Forum with a special working session addressing desertification.

- With support from CIDA, Developing Countries Farm Radio Network (DCFRN), a Canadian-based NGO, undertook a very successful initiative to reach out to local farmers and communities to encourage their participation in the preparation of national action plans, and to share knowledge. The group produced a series of practical and sustainable agricultural information programmes and distributed the scripts to broadcasters in 120 countries. These radio programmes were designed to be informative and to provide practical techniques and strategies to combat desertification, and to encourage people to take action.

- CIDA also supported the International Institute for Environment and Development (IIED) to produce and distribute various issue papers and the newsletter, *Haramata*, which helped to strengthen networking among a broad range of people and institutions involved in drylands management and to link policy makers and practitioners in east, west, and southern Africa.

2. The Sahara and the Sahel Observatory (OSS)

SID-SISEI Programme
Environmental information circulation and monitoring system on the Internet
An OSS contribution to item 9 of Agenda

1. INTRODUCTORY NOTE

1.1. Background

Significant efforts are being made to manage natural resources, involving scientific and technical research, the implementation of appropriate programmes and projects in the field, and the harnessing of local know-how. The results, in the form of products, information and data, represent a unique scientific, technical and cultural heritage for sustainable development and the fight against poverty in Africa. However, it has to be recognized that this information heritage is more often than not dispersed on account of sectoral compartmentalization at the inter-institutional level, which results in duplicated activities that constitute a waste of time, energy and money.

The huge body of data, information and products thus accumulated does not always amount to a usable information capital, for three main reasons:

(i) The results of data collection and processing are disseminated among only a limited number of users who often form part of the same professional, scientific or technical milieus;

(ii) The products generated are only to a limited extent transformed into information that can be directly used in decision-making processes relating to the management of natural resources and the environment;

(iii) The information all too often remains dispersed, restricted and hard to access by users at both the national and international levels owing to a lack of suitable mechanisms for the circulation of information.

The result of all this is an apparent lack of information at the local level which contradicts the existence in reality of an information heritage within national and international institutions or bodies specializing in Africa throughout the world. This loss of "institutional memory" due to dispersal and compartmentalization is now recognized as being one of the major obstacles to sustainable development in Africa.

1.2. International context

Strengthening of the collection and exchange of information is recommended by Agenda 21 (Chapter 40) and by other international legal instruments relating to the environment, such as those on climate change (Articles 5 and 12), biodiversity (Articles 12, 17 and 18), combating desertification (Articles 16 and 18), the Ramsar Convention, CITES, etc.

Since 1994, moreover, several International Telecommunications Union (ITU) conferences, in particular the first World Telecommunication Development Conference (WTDC) (Buenos Aires, 1994), the Plenipotentiary Conference (Kyoto, 1994) and the second WTDC (Valletta, 1998), have emphasized the role of telecommunications and information technologies for environmental protection and sustainable development. Among other things, WTDC-98 recommended the following:

1. The implementation of a global operational telecommunications-environment project on the development and use of telecommunications and information technologies for the protection of the environment and sustainable development.

2. The organization of seminars, regional workshops and training and research programmes in order to study the matter in greater depth and heighten awareness among all those concerned of the value of implementing multilateral and bilateral projects within the framework of international cooperation.

3. The establishment of a framework for international cooperation which will enable all those concerned to carry out, promote and develop projects to ensure optimum use of the most appropriate telecommunication and information technologies for the protection of the environment and sustainable development.

2. SISEI concept and approach

2.1. Concept

The Environmental Information Circulation and Monitoring System on the Internet (SISEI), which is being implemented in the framework of a number of pilot projects at the national and regional levels in Africa (1998-2000: Benin, Mali, Morocco, Senegal, Tunisia, the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), the Intergovernmental Authority on Development (IGAD) and the Arab Maghreb Union (AMU)), is an environmental information management tool to assist in implementing the legal instruments relating to the environment in Africa - desertification, biodiversity, climate change, wetlands - and is based on new information and communication technologies. The SISEI concept is derived from the observation that the success of many projects aimed at establishing information systems has been seriously impaired by their limitation to purely technical aspects.

SISEI comprises:

- A coherent and efficient institutional framework which is conducive to synergy among current or planned endeavours;

- A technological tool for the accessing, exchange and circulation of useful information relating to sustainable development in general and the environment in particular, for the benefit of decision-makers, governmental or non-governmental structures, civil society and the private sector on the African continent.

The SISEI concept responds to the needs expressed by a large number of decision-makers responsible for environmental matters in developing countries. As well as being a technological tool, it also seeks to encourage the various players involved in the management of natural resources and the environment to share their experiences and information heritage. This approach is aimed at creating a synergy of both human and financial resources.

The SISEI concept is also based on the principles of balancing supply and demand in respect of information, and adoption by the national players concerned. The establishment of SISEIs is starting to be included in national programmes such as national development plans, national environmental action plans and action programmes for combating desertification.

The SISEI takes the form of a web site which serves as an environmental gateway at the national, subregional and regional levels, offering the user a one-stop information shop comprising several specialized gateways such as:

- An institutional gateway, with each partner owning its own web site enabling it to become acquainted with other partners.

- The general information on the body in question (contact details, terms of reference and prerogatives, objectives, resources, results, available services, products) is arranged according to a pre-established and homogeneous format.

- The institutional portal, which is structured on the basis of a topology of the partners, provides access to the web sites of the various partner bodies.

- A thematic gateway, in which the information is organized according to sectors of activity (forestry, animal breeding, agricultural production, irrigation, combating desertification, biodiversity, etc.).

- Thematic groups, formed around institutions involved in the field in question, are responsible for structuring the information and disseminating it via the SISEI gateway, taking care to balance the information supply and demand.

- A virtual library which, under the auspices of the documentation centres of the different ministerial bodies, is gradually opening up direct online access to reference material.

- Anyone is able to identify a document reference and then access the source electronically from his or her own workstation.

- A virtual map library which, subject to the regulatory provisions in force, allows access to map resources (thematic maps, satellite images, aerial photographs, geodesic graticules).

- Different levels of product are offered: metadata (references), quick look (reduced images), raw data (digital reproduction) or analytic products (combinations of georeferenced information layers accessible via the Internet - GisWeb).

2.2. Users

SISEIs serve the various partners concerned with environmental issues, namely the authorities (coordination bodies, ministries and their respective technical services); the scientific and technological community (research laboratories, higher education and training institutions, etc.), civil society (NGOs, associations, etc.), the private sector (consultants, companies, etc.) and partners in cooperation (multilateral and bilateral development agencies, etc.).

The main users are thus:

- technical directors and other technical officials;
- programme and project managers;
- national bodies responsible for coordinating the United Nations conventions;
- the scientific and technological community;
- the media;
- the general public;
- national, subregional, regional and international institutions.

2.3. Approach

Drawing on the experience and preliminary results obtained from the pilot projects, the SISEI concept is based on the combination of three components taken in parallel, namely institutional, for synergy of action between players; technical, to strengthen the local capacities concerned; and scientific, for the development and rational use of NICTs for sustainable development in Africa.

The institutional component is based on a participative approach through partnership between the different players and information generators. It fosters coordination through consultation and decision-making on the basis of negotiated consensus, and is aimed at:

- Fostering the establishment of an institutional framework linking the international, regional, subregional and national levels and which is conducive to the circulation and exchange of useful information for the management of natural resources and the environment on the various scales concerned;

- Defining universally-acceptable agreements for the constitution and sharing of a common information capital with a view to managing environmental information, making optimum use of existing resources and identifying additional needs;

- Establishing a strategy that is tailored to the interests of the different players;

- Drawing up rules and mechanisms in respect of the circulation, accessibility, exchange and updating of the information contained in the SISEI.

An agreement is reached between all parties on these different points through the drawing up and adoption of an "information charter".

The technical component is primarily aimed at:

- Strengthening national, subregional and continental capacities for communication infrastructure development with a view to ensuring access to and efficient use of information and communication technologies for meeting the needs identified in the institutional component. Public and private telecommunication operators are encouraged to facilitate such access;

- Developing the capacity of SISEI partner institutions to make use of existing infrastructures and master information and communication technologies in order to:

  - circulate information on the management of natural resources and the environment (documents and various types of product such as reports, publications, files, maps, data, indicators and metadata);

  - facilitate the integration and networking of existing databases and geographic information systems using Internet services;

- Establishing an information capital by developing capacities for the management and enhancement of SISEIs.

The scientific component is primarily aimed at enabling:

- The updating, adaptation and transfer of new methods and products which require constant surveillance in a rapidly changing environment;

- The harmonization of tools and formats in a highly competitive sector;

- Maintaining the interest of the partners concerned in order to avoid a further widening of the digital divide.

2.4. Methodology

Three major phases are necessary for the implementation and subsequent success of an SISEI at the national, subregional and regional levels:

- An institutional phase comprising:
  - awareness raising and discussion of the concept with the players in order to identify their interest and commitment in respect of the SISEI;
  - specific studies on each country in order to identify prerequisites for the sustainability of the project;
  - an institutional profile of the environment based on inventories;
  - a consultative forum for the players concerned, for the purpose of, among other things, drawing up an information charter to serve as a genuine draft agreement.

- An equipment and training phase comprising:
  - appraisal of the capacities and needs of partner institutions in order to fully implement and use SISEI;
  - strengthening of the technical capacities of the institutions concerned and training of technicians with a view to the creation and maintenance of the network of harmonized web sites.

- An evaluation, feedback and extension phase comprising:
  - internal and external evaluations aimed at improving the SISEI and adapting it to the evolving needs of its users;
  - input of the selected information into the system;
  - feedback in the form of a national forum or workshop;
  - drawing up of arrangements for extending the project to other national partners.

The methodology is aimed at defining a concept for sustainability of the project at the level under consideration.

3. SISEI Programme for 2002-2005

3.1. General objective

Efficient management of resources for sustainable development in general, and for the fight against poverty in particular, in the African countries contributes to the improvement of planning processes through improved management and the better harnessing of information, as well as through increased collaboration and coordination between players at different levels.

The general objective of the SISEI programme is to provide the African countries and regional organizations with systems for the validation, circulation and harnessing of relevant environmental information with a view to strengthening the participative approach at the different decision-making and operational levels and thereby promoting enlightened decision-making.

3.2. Specific objectives and expected results

The establishment of SISEIs will be based on the principle of generating institutional agreements and technical solutions proposed by the partners according to local contexts and conditions.

The programme is aimed at developing a full and operational system on three levels. Particular attention will be paid to the points of interaction and transfer between levels. The programme partners will therefore be invited to determine the substantive aspects involved, with a view to setting up information exchange mechanisms between:

- the African continent and external partners in the framework of solidarity between North and South;

- the African countries and subregions, bringing together existing experience and capacities.

The detailed objectives, as expressed by the partner subregional organizations and national institutions, are primarily focused on:

- The strengthening of national capacities for the management of environmental information at the subregional and national levels in the different environmental sectors;

- Support for and encouragement of ongoing initiatives through the facilitation of direct exchanges of information and mutual cooperation between beneficiary African countries and their partners;

- The development of the existing information heritage through encouragement and support for local initiatives and by facilitating the exchange of experience among the various local, national and subregional players;

- The establishment of an operational network of African institutions involved in or producing information, and of national and subregional focal points for the various international and regional legal instruments relating to the environment, through a stable institutional framework and common gateways.

The results expected from the different SISEIs are:

- A functional, coherent and efficient institutional framework that makes for synergy in current or planned endeavours;

- An operational technological tool for access to, and the exchange and circulation of, useful information;

- Technical structures that can exchange dialogue in order to integrate scientific and technical data in planning and decision-making processes;

- Increased use of Internet-based information sources in support of processes intended to assist in decision-making through improved ergonomics of the access gateways;

- Better integration of the different players in participative decision-making processes;

- Easier access for the different institutions and the general public to environmental information in the public domain, such as legal texts;

- A telecommunication and information network interlinking national systems through the regional nodes;

- A distance learning platform through the bringing online of different environmental learning modules;

- An operational process of quality monitoring and of data and information sharing and exchange for the purpose of ensuring synergy between the different players and programmes;

- Assistance in the drafting of reports and studies on the basis of information that is known to be reliable and from common sources, thanks to the SISEI.

3.3. Development of the operational phase (2002-2005)

Three stages are proposed for deployment of the operational phase of the programme:

Stage 1: Duration: 4 months
The first stage relates to capitalization on experience and the transfer of know-how and skills for the strengthening of regional, subregional and national capabilities ahead of the decentralized implementation of the programme.
The different steering, scientific and technical committees (see above) will be established.

Stage 2: Duration: 8 months
This stage will serve to strengthen regional and subregional capacities for acquiring the necessary means to implement actions at the respective levels as well as at the national level.

Stage 3: Duration: 36 months
The third stage relates to the actual implementation of the SISEIs. During this phase, the regional SISEI, the four subregional SISEIs and some 20 national SISEIs are gradually set up in year-by-year stages. In parallel to this, specialized tools such as GisWeb are improved, transferred and integrated into the SISEIs.

Support for implementation of the programme in the countries and the subregions will be coordinated by a consortium set up around OSS, with the United Nations Institute for Training and Research (UNITAR), ITU, the United Nations Environment Programme (UNEP), the United Nations Office for Project Services (UNOPS), the United Nations Development Programme (UNDP), the African Organization of Cartography and Remote Sensing (OACT) and other partners.

The 2002-2005 phase of the SISEI programme is aimed at making the SISEI concept operational in the four subregions of the African continent, namely CILSS-ECOWAS (Economic Community of West African States), IGAD, AMU and the Southern African Development Community (SADC). In addition to the subregional bodies that will be establishing their own subregional systems, several countries in each subregion will be designated to implement operational DIS (System for the circulation of information on desertification)/SISEIs at the national level.

Countries will be chosen on the basis of their confirmed commitment to implementation of the programme.

3.4. Institutional framework

In 1996, the Sahara and Sahel Observatory (OSS), which was set up as an international framework for North-South partnership, initiated the DIS concept, which was subsequently broadened into the SISEI concept.

This concept, implemented by UNITAR, has been tested and validated in a number of African countries and subregions thanks to the financial backing received from France, Germany, Italy, the World Bank, ITU, UNDP/UNSO, UNEP/GRID (Global Resources Information Database) and the Fonds Francophone des Inforoutes.

An assessment of the pilot projects is annexed hereto.

In the new configuration, regional organizations such as the African Organization for Cartography and Remote Sensing (OACT) - the institution charged by the African Ministerial Conference on Environment (AMCEN) to serve as the focal point for the "ecological monitoring, cartography of natural resources, remote sensing and early warning" network in the framework of the regional action plan for the fight against desertification - or the Pretoria-based non-governmental organization Environmental Information Systems in Africa (EIS Africa), together with subregional organizations

(e.g. CILSS, AMU, IGAD and SADC), will have a key role to play in implementation of the regional and subregional components of the SISEIs and in supporting countries in the establishment of their national SISEIs.

In parallel to this, while leaving the policy side of the programme to OSS, ITU, UNEP and UNOPS will provide technical support in their respective fields of competence (i.e. telecommunications, the environment, remote sensing and administration). UNITAR will oversee the operational setting-up and training method components using existing African capacities.

Finally, through the "UNEP.Net" initiative, and the coherence and synergy of the efforts deployed by the secretariats of the environmental conventions, the areas of access to and circulation of information will have to be sought in order to ensure:

- that all possible means are employed to strengthen African capacities for free access to and sustained management of information resources on the environment using SISEI;

- a harmonized flow of data and information between the global (UNEP.Net) and local (SISEI) levels.

A steering committee made up of representatives from the organizations involved in the management of the programme will attend in particular to monitoring the institutional framework.

3.5. Respective roles of the various partners

Partners	Responsibilities
National structures	
National SISEI leaders Institutions designated by countries as responsible for leading the SISEI at the national level	• Coordinates implementation of the programme and run the network of partners at the national level; • Liaises with the programme leader and operator at the national level.
Subregional organizations	
CILSS-ECOWAS Intergovernmental organization for western Africa	• Responsible for SISEI-WA regional project; • African operator for SISEI-WA; • Ensures political consistency at the subregional level; • Monitors and evaluates the national projects in the countries within the subregion, assisted by OSS and UNITAR.
AMU Intergovernmental organization for northern Africa	• Responsible for the SCIDE-AMU subregional project; • Ensures political consistency at the subregional level; • Mandates OSS and its partners with respect to support for implementation of the SCIDE-AMU and national SISEIs with the backing of UNITAR.
IGAD Intergovernmental organization for eastern Africa	• Responsible for the SISEI-EA regional project as the environment component of the RIIS; • Support for national SISEIs with the backing of OSS, UNITAR, ITU and UNEP; • SISEI-EA operator, if required.
SADC Intergovernmental organization for southern Africa	• Responsible for the regional SISEI-SA project; • Support for national SISEIs with the backing of OSS, UNITAR, ITU and UNEP; • SISEI-SA operator, if required.
International organizations	
OSS Autonomous international organization whose members are AMU, CILSS and IGAD and their respective member countries plus Egypt	• Ensures overall consistency in the framework of support for the implementation of the UNCCD; • Carries out a global evaluation of the programme on behalf of its members; • Hosts and manages DIS/SISEI Africa; • Runs the programme steering committee.

OACT African organization responsible for cartography, remote sensing and geographical information systems (SIGs)	• Supports spatial information gathering; • Supports monitoring and evaluation of the programme; • Participates in GisWeb development activities; • Joint partner of OSS for SISEI-Africa.
UNITAR United Nations agency for training and training research	• Ensures technical consistency of the programme; • Responsible for the training machinery; • Serves as a link between the three convention (UNCCD, CBD, UNFCCC) and integrates their requirements; • Undertakes training of trainers and initial training where the necessary competences are not available *in situ*; • Strengthening of subregional capacities; • Supervising of R&D activities carried out within the framework of the programme (GisWeb, metadata)
ITU United Nations specialized agency for telecommunications with a membership comprising Member States (governments and State operators) and Sector Members (private organizations, equipment manufacturers, etc.)	• Technical support for telecommunications and the Internet; • Assistance with training for the operator staff; • Technical and economic project studies; • Relations with the private sector and telecommunication operators in the countries in question; • Assistance in negotiations with operators and in obtaining equipment.
UNEP United Nations operator for environment databases	• Links with UNEP Net and ensures consistency with other environment programmes; • Technical support for GisWeb and databases.
UNOPS Support services office for United Nations projects	• Support for financial resource mobilization; • Support for finance management; • Consistency with other United Nations programmes; • Technical support for project assembly; • Satellite images.
Secretariats of international conventions (CBD, UNCCD and UNFCCC)	• Provide support in the framework of reports to Conferences of the Parties; • Contribute to overall evaluation of the programme; • Validate the programme's strategic orientations.
Other partners Private sector, cooperation agencies, etc.	Roles and contributions to be defined by the new partners according to their interest in the programme.

3.6. Scientific and technical framework

A large number of institutions and operators are working in the field of new technologies on the same themes of the environment and geographical issues in Africa. If the objectives sought are more or less identical, then it would be worth comparing, or even harmonizing, the tools and methods developed.

The scientific and technical community could only stand to gain from such an exchange, which would give rise to efficient cooperation. Users in the field can only benefit from harmonized approaches, as they would no longer be torn between several essentially convergent initiatives that in reality often compete with one another. To this end, a high level scientific committee comprising the top experts should be set up.

3.7. Consolidation of experience acquired during the initiation phase

The operational phase of the programme will be implemented through the strengthening of national, subregional and regional technical and institutional capacities to enable those concerned to directly initiate, train and develop and to monitor and evaluate the actual implementation of the national and subregional SISEIs.

The first stage is aimed at analysing and consolidating the experience gained in the launch and development phase of the SISEI, in particular in the conceptual areas, on the basis of the following:

- Building and documenting examples to ensure the replication of the concept on the different scales;
- Studying compatibility between the level of approach and methods to be applied;
- Refining target user groups in order to reach a compromise between accessibility of information tailored to the target users and the widest possible dissemination of that information.

Technical solutions can then be put forward in response to the need to:

- Strengthen communication capacities in the countries concerned using local strategies;
- Promote adoption of the technologies and systems by users and SISEI partners;
- Clearly specify the demand for environmental data that are useful for development in Africa, and initiate specific activities under each of the identified themes;
- Evaluate the impact on demand of knowledge of the information capital;
- Establish mechanisms for the transfer of information at the level of users in the field, particularly the local communities concerned (diskettes, CD-ROMs, rural radio).

Appendix

Assessment 1996-2001

1. National pilot projects

Five pilot projects initiated by OSS and implemented by UNITAR and the countries concerned were carried out in northern Africa (Morocco and Tunisia) and western Africa (Benin, Mali and Senegal). On the basis of those projects, a methodology was developed and refined for implementation of the national SISEIs.

That methodology was applied in a similar fashion in each country, with a few minor differences to accommodate the specific features of the various national contexts encountered, and the following results were obtained:

- Definition of institutional and technical frameworks and of terms of reference for implementation of the concept at the presentation and awareness-raising stage, and performance of a feasibility study.

In each case, the SISEI projects are integrated into an existing institutional framework in order to reinforce the mechanisms established. These are the environmental action plans (EAPs) established by the World Bank within the framework of structural adjustment policies, and the national, subregional and regional action programmes (NAPs, SRAPs and RAPs, respectively) developed in the framework of implementation of the UNCCD.

- Elaboration of a national environment profile, involving the listing of institutions, legal texts, programmes, projects and documents relating to the environment;

- Adoption of an "information charter" by a round table set up to define the roles of the various partners and the information content of the SISEI on the basis of the needs expressed;

- Elaboration of the national environment gateway comprising web sites designed and created by the project partners following technical support in the form of practical training in content production.

In the interests of consistency and efficiency, the national SISEIs are very similar ergonomically speaking. Examples of their implementation during the 1996-2001 phase are given in the present document (see pages 4 and 7).

On the basis of the experience gained from the national, subregional and regional pilot projects, it has been possible to identify a number of obstacles which will need to be removed during the operational phase of the programme (2002-2005).

- The infrastructure and telecommunications facet: Owing to a lack of technical capacity on the part of the countries (limited bandwidth) and difficulties in accessing such capacities, the SISEIs are temporarily hosted on a UNITAR server, with the exception of Senegal, Tunisia and very soon Mali, where private and public (university) hosts have been approached. The efforts made in respect of the structuring and dissemination of information will have to be accompanied by a strengthening of the communication capacities of the local users in order for the information to become accessible Africa-wide. In order to redress the situation, it will be necessary to request the support and intervention of public or private local or international operators. It will also be necessary to integrate local server solutions as from the initial phase in order to foster adoption of the SISEIs by the partner institutions. Another possibility will be to host mirror sites of the other SISEIs, to which and it will be necessary to define the arrangements for updating from the main sites.

- Budgetary allocation for equipment: The projects implemented in beneficiary countries, with the exception of Benin and Mali which received additional funding within the framework of a loan from the World Bank, did not receive a sufficient quantity of computer equipment to allow the effective participation of the players concerned and the dissemination of SISEI products. In future, therefore, an appropriate amount should be allocated for such equipment. Computer companies will be regularly approached with the request that they contribute to the improvement of the SISEI equipment.

- Staff motivation and involvement: Difficulties arise in the spontaneous and regular updating of SISEIs by the partner institutions. In this regard, it will be necessary to introduce, from the outset, measures that are more encouraging and motivating on the one hand and coercive on the other: technical solutions, individual satisfaction, task included in the job description of the person concerned and services provided linked to technical training.

Uganda and Burkina Faso currently benefit, through UNITAR, from technical assistance from OSS in implementing the pilot phase of their SISEI according to the same methodology. The majority of western, eastern, and northern African countries, as well as a few southern African countries, have expressed their desire to carry out an SISEI project themselves.

2. Subregional project

The Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), together with the Economic Community of West African States (ECOWAS), in the framework of their subregional action programme (SRAP), have launched the development of a subregional SISEI using a methodological approach similar to that employed at the national level.

A subregional round table was held in 1999 to draw up an information charter with the support of ITU, OSS (with financing from France) and UNDP/UNSO. It was attended by all the national focal points responsible for implementation of the UNCCD, as well as a number of representatives from subregional organizations. A technical training period following the round-table resulted in the formation of a team responsible for preparing a prototype of the western Africa SISEI.

The preparation of the subregional component in western Africa has made possible the establishment of machinery for networking and interlinking of the different subregional and national programmes and institutions through the interconnection of the national SISEIs, as well as the integration at the different levels of the availab > environmental data and information requiring consolidation.

IGAD and AMU have in turn initiated a process for the implementation of a subregional SISEI.

Workshops were organized in each of these two subregions. SCIDE-AMU has been validated by all AMU member countries and is an integral part of the subregional action programme (SRAP) /AMU.

In the IGAD area, all The focal points of the three post-Rio conventions (on Biodiversity, desertification and climate change) from the six member countries closely collaborated, within the framework of a subregional workshop, on the preparation of the eastern Africa SISEI project.

At the subregional and national levels, all the countries are ready to launch their SISEIs in association with the different focal points for the post-Rio conventions.

The initial results are encouraging and have aroused the interest of the other subregions.

3. Regional project

In its pilot phase, the activities organized within the framework of the regional SISEI were geared towards the development of tools and applications which could subsequently be adapted and replicated at the national and subregional levels.

The AfriWeb concept, which was designed in collaboration with UNEP/GRID in Geneva with the assistance of a group of international experts, gave rise to a tool based on the combination of web and SIG technologies which enables the user, without the need for a database, SIG programme or any particular technical knowledge, and in an interactive fashion:

- to access, using any navigator, a remote georeferenced database;
- to display information layers, overlay vector plans and consult the corresponding legends;
- to conduct analyses on the vector information plans by means of mathematical or logical operators.

The regional SISEI developed by OSS with the contribution of UNITAR and UNEP, known as the Africa SISEI, is in due course destined to become a gateway for:

- the African information heritage that is dispersed throughout the different subregional and regional organizations in Africa;

- existing information resources that are available outside Africa;
- regional data and information on the themes of sustainable development and the different international legal instruments relating to the environment;
- the subregional SISEIs;
- the national SISEIs.

The GisWeb application, which is a tool in a class of its own, is now operational throughout Africa. It operates on the basis of a georeferenced database covering the entire African continent. The database was compiled from the various databases available (unrestricted content) from a number of data producers: UNEP, FAO, NASA, DCW, WRI, IRD, etc.

GisWeb has been replicated in Senegal. Advanced technical training has enabled the Senegalese players to develop a harmonized georeferenced database which has been integrated into the GisWeb application.

4. Products generated

The experience jointly acquired by OSS and UNITAR with financial and/or technical partners such as France, Germany, the World Bank, GRID/UNEP, UNDP/UNSO, ITU and the Fonds Francophone des Inforoutes led to the production of:

- A methodological guide to SISEI implementation, which runs through the various stages involved in setting up an SISEI. The methodological elements are provided in the form of a toolbox;
- A CD-ROM presenting the work carried out by the countries and the products generated during the initial phase of the programme;
- A web gateway (www.sisei.net) providing online access to all these sites and products.